

# TA-FA5ES/FA7ES

## SERVICE MANUAL

AEP Model



Photo: TA-FA7ES (Black)

### SPECIFICATIONS

#### System

Power Amplifier: Pure-complementary SEPP MOS  
FET power amplifier with all stages directly coupled  
Preamplifier: Low-noise, high-gain equalizer amplifier  
Power section: Large-capacity power supply advanced  
STD

#### Rated output

TA-FA7ES  
4 ohms, 150 W + 150 W (DIN 0.7%)  
8 ohms, 100 W + 100 W (DIN 0.7%)  
TA-FA5ES  
4 ohms, 135 W + 135 W (DIN 0.7%)  
8 ohms, 90 W + 90 W (DIN 0.7%)

#### Speakers impedance

4 to 16 ohms

#### Output bandwidth (8 ohms)

10 Hz to 100 kHz (at 40 W output, and  
high-frequency distortion rate of  
0.08%)

#### Dynamic headroom

at 4 ohms: TA-FA7ES 2 dB  
TA-FA5ES 3 dB  
at 8 ohms: TA-FA7ES 1.2 dB  
TA-FA5ES 2 dB

#### Total harmonic distortion

0.005% (at 8 ohms, 10 W output)

#### Damping factor

100 (8 ohms, 1 kHz)

#### Intermodulation (IM)

0.005% (8 ohms)

#### distortion (60 Hz:7 kHz=4:1)

#### Throughrate

125 V/ $\mu$  sec, 250 V/ $\mu$  sec (Inside)

#### Residual noise

Less than 115  $\mu$ V (network A)

#### Equalizer deviation

PHONO MM: 20 Hz to 20 kHz,  
 $\pm 0.2$  dB

#### Frequency response

TUNER, CD, AUX, TAPE 1, 2, 3: 2 Hz  
to 100 kHz  $\pm 3$  dB

#### S/N

PHONO MC: TA-FA7ES 78 dB  
(A Fil, 0.5 mV)  
TA-FA5ES 76 dB  
(A Fil, 0.5 mV)  
MM: 87 dB (A Fil, 5 mV)  
TUNER, CD, AUX, TAPE 1, 2, 3:  
105 dB

#### Inputs

##### Input sensitivity and impedance

PHONO MC: 0.25 mV, 100 ohms  
MM: 2.5 mV, 50 kilohms  
TUNER, CD, AUX, TAPE 1, 2, 3:  
150 mV, 30 kilohms

##### Maximum input capability (1 kHz)

PHONO MC: 9 mV  
MM: 150 mV

#### Outputs

##### Output level / impedance

REC OUT 1, 2, 3: 150 mV, 1 kilohms  
PHONES: 10 mW (at 8 ohms)

##### Tone controls

BASS (100 Hz):  $\pm 7$  dB  
TREBLE (10 kHz):  $\pm 6$  dB

#### General

##### Power requirements

220 - 230 V AC, 50/60 Hz

##### Power consumption

TA-FA7ES: 330 W  
TA-FA5ES: 300 W

##### Dimensions (approx.) (w/h/d)

430  $\times$  175  $\times$  450 mm  
(17  $\times$  7  $\times$  17  $\frac{3}{4}$  inches)  
incl. projecting parts and controls

##### Mass (approx.)

TA-FA7ES: 19.8 kg (43 lb 6 oz)  
TA-FA5ES: 17.5 kg (38 lb 10 oz)

#### Supplied accessories

Remote commander (remote)  
RM-S703 (1)  
Sony batteries SUM-3(NS) (2)

Design and specifications are subject to change without  
notice.



INTEGRATED STEREO AMPLIFIER  
**SONY**<sup>®</sup>



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### SAFETY-RELATED COMPONENT WARNING!!

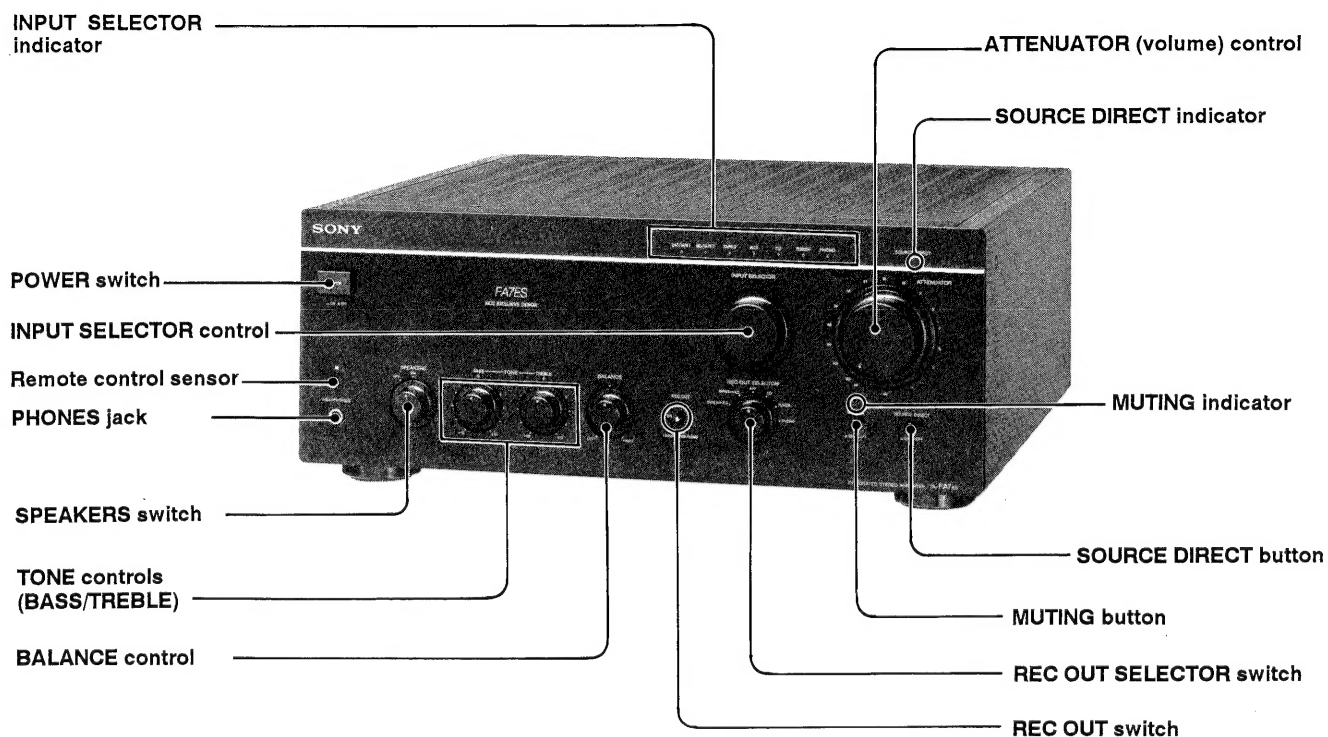
COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

## SECTION 1 GENERAL

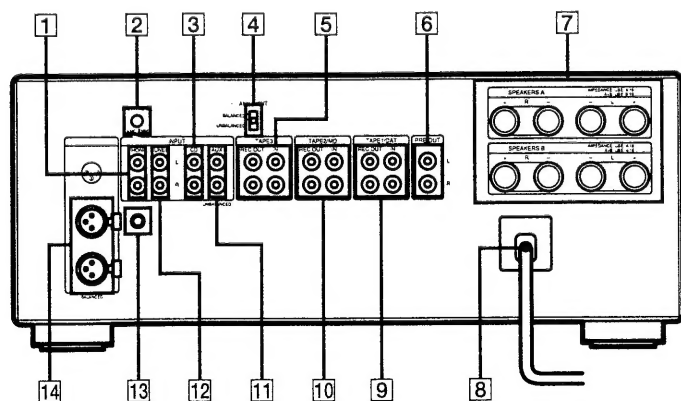
This section is extracted from instruction manual.

### • Location of Controls

#### Front Panel Descriptions



### Rear Panel Descriptions

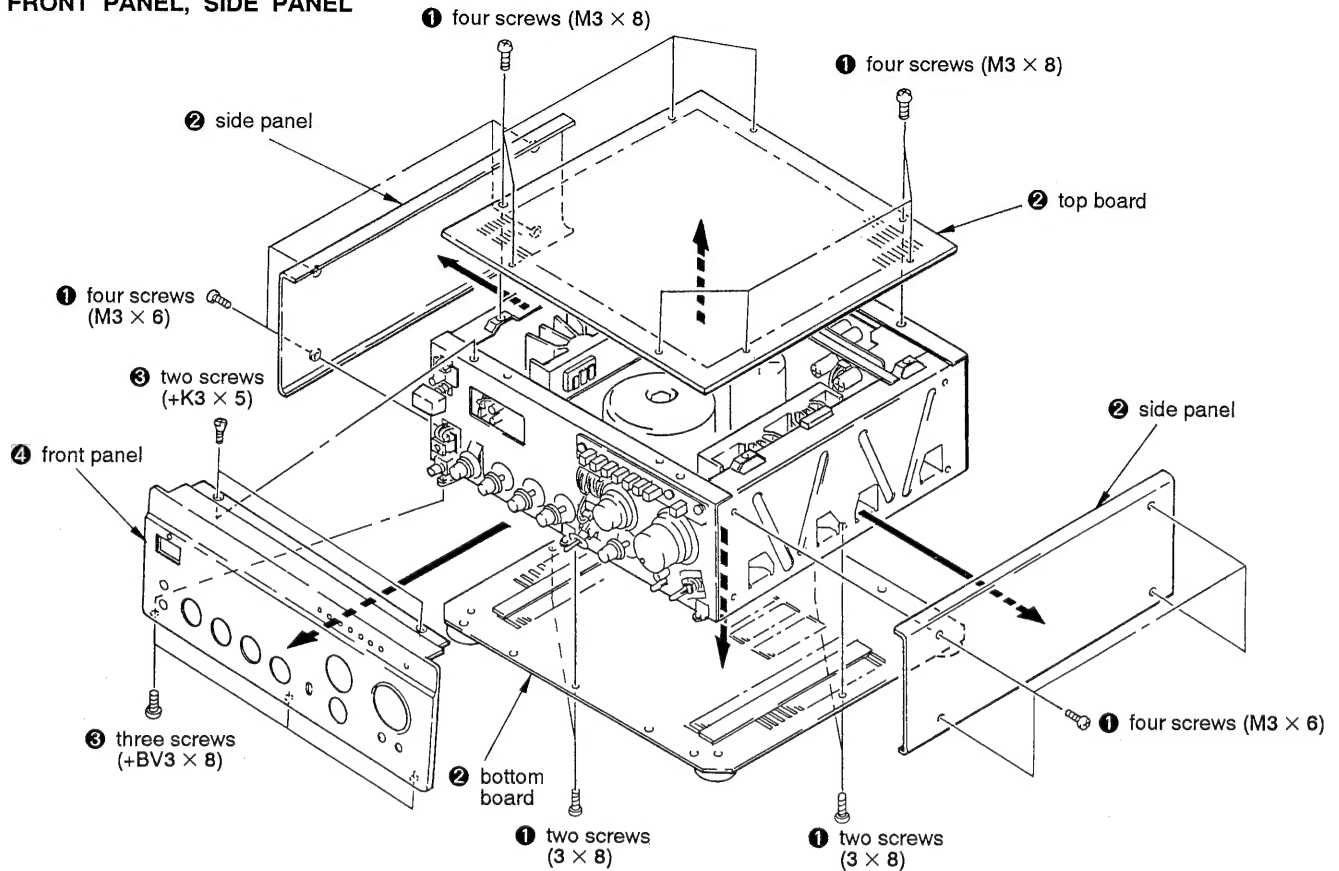


- 1 PHONO
- 2 CARTRIDGE MC/MM
- 3 CD
- 4 AUX INPUT (TA-FA7ES only)
- 5 TAPE3
- 6 PRE OUT
- 7 SPEAKERS A/B
- 8 Mains lead
- 9 TAPE1/DAT
- 10 TAPE2/MD
- 11 AUX(UNBALANCED)
- 12 TUNER
- 13  $\hbar$  (earth)
- 14 AUX(BALANCED) (TA-FA7ES only)

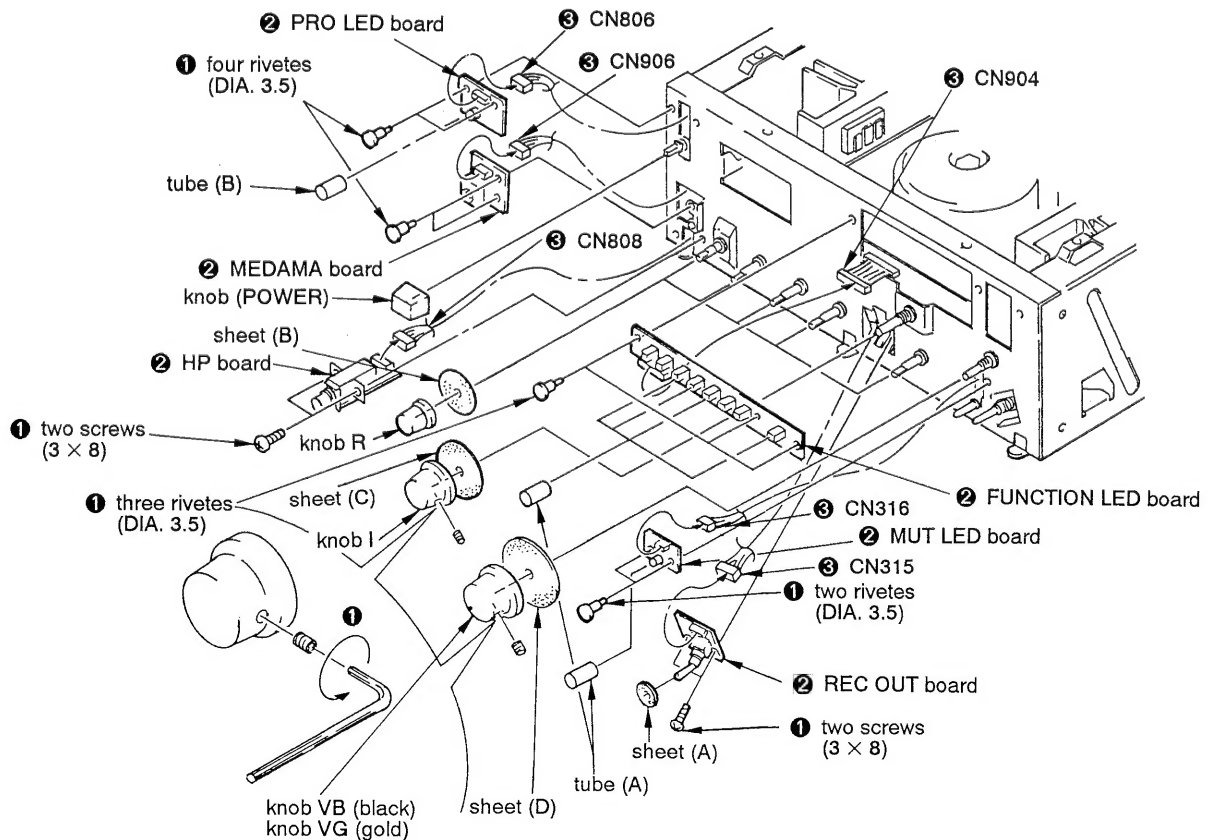
## SECTION 2 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

### FRONT PANEL, SIDE PANEL



### PRO LED, MEDAMA, HP, FUNCTION LED, MUT LED, REC OUT BOARDS



**AC SW, TONE CONTROL, VOL BOARDS**

This diagram illustrates the assembly of the AC SW, Tone Control, and Volume Control boards. The components are shown in an exploded view, with arrows indicating their relative positions and assembly sequence.

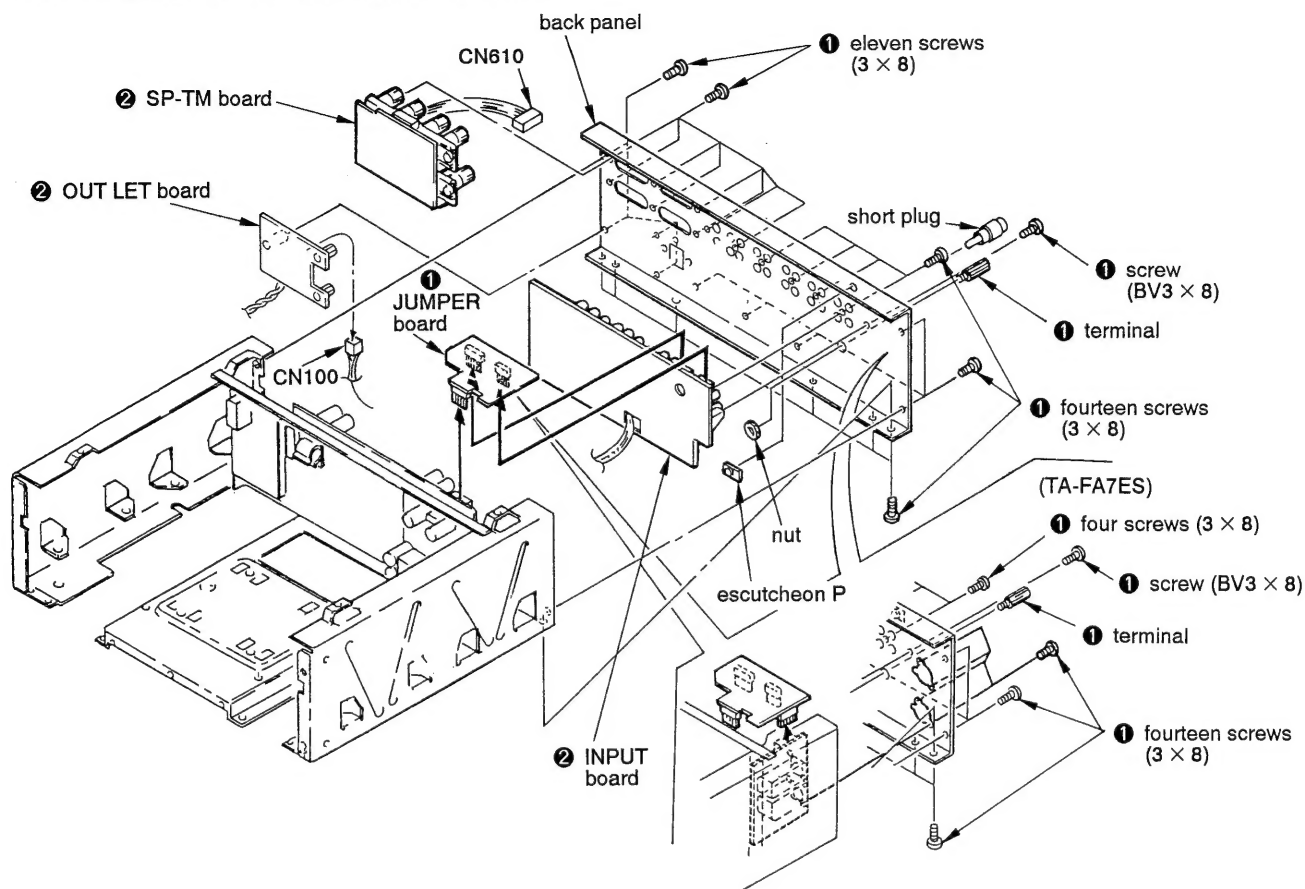
**Key Components and Labels:**

- 1 rivet (DIA. 3.5)**: Used for securing the sub chassis.
- 2 AC SW board**: The main switching board.
- 2 TONE CONTROL board**: The board responsible for audio tone control.
- 2 VOL board**: The volume control board.
- sub chassis**: The base structure for the boards.
- 1 two screws (3 x 6)**: Used for mounting the sub chassis.
- 1 two screws (3 x 8)**: Used for mounting the boards.
- 1 four nuts**: Used for securing the boards.
- 1 three nuts**: Used for securing the boards.
- 1 three screws (3 x 8)**: Used for mounting the boards.
- 1 washer**: Used for mounting the boards.
- 1 button**: A component on the VOL board.
- 1 six screws (3 x 8)**: Used for mounting the boards.
- 3 CN4**, **3 CN807**, **3 CN902**, **3 CN907**, **3 CN310**, **3 CN901**, **3 CN301**, **3 CN303**, **3 CN352**, **3 CN309**, **3 CN308**, **3 CN302**: Various connectors and components on the boards.

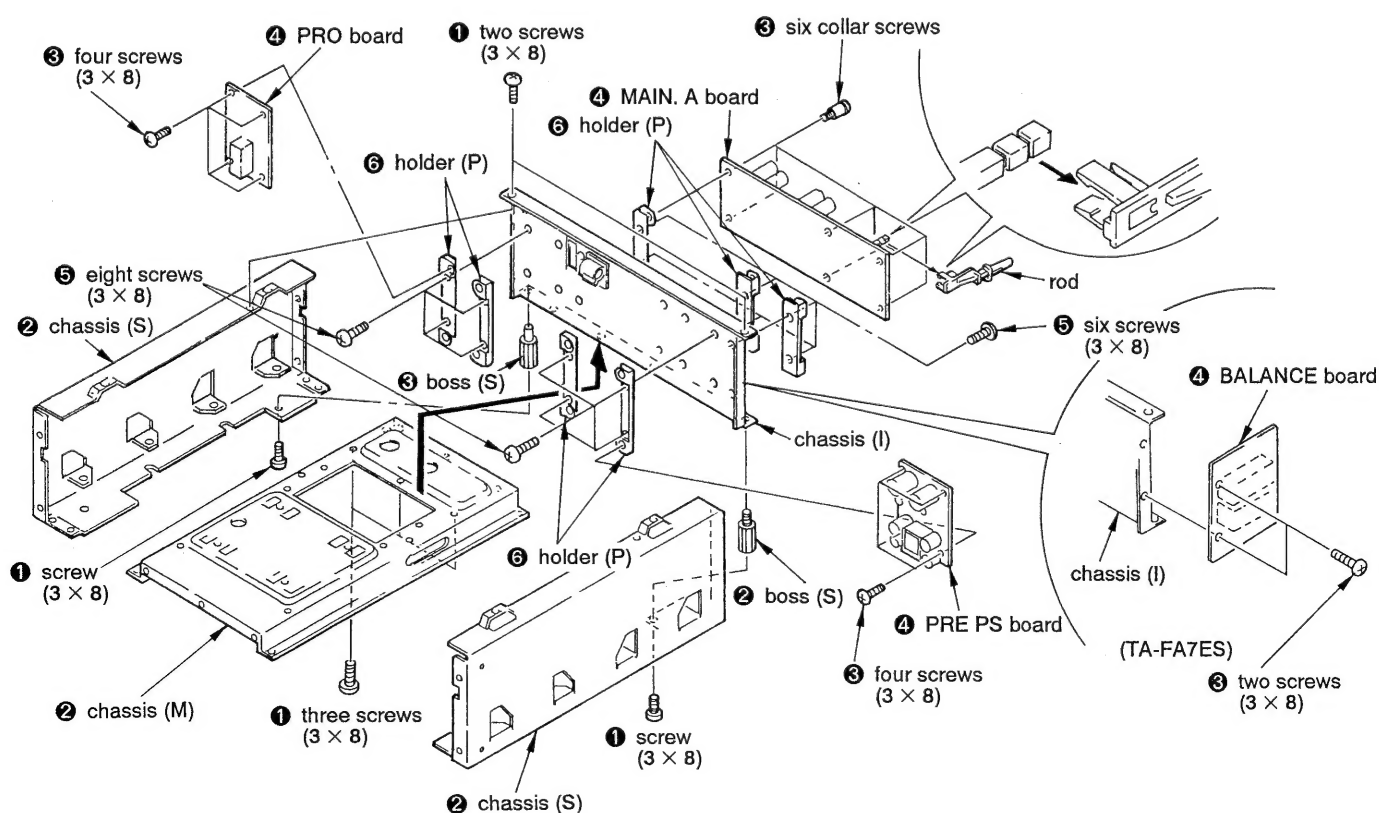
The diagram shows the boards being mounted onto the sub chassis using screws and nuts. The VOL board is shown with a button and a connector. The TONE CONTROL board and AC SW board are shown with various connectors and components. The diagram is a detailed technical drawing showing the assembly of the AC SW, Tone Control, and Volume Control boards.

[illegible]

## OUT LET, SP-TM, JUMPER, INPUT BOARDS



**PRO, MAIN. A, PRE PS, BALANCE BOARDS AND HOLDER (P)**



## SECTION 3

### ELECTRICAL ADJUSTMENT

**Note:** Adjustment should be performed 5 minutes later, after the power switch is on.

## Bias Adjustment

**Setting:**

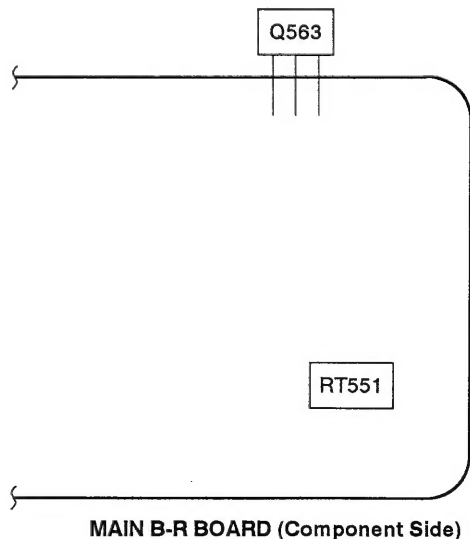
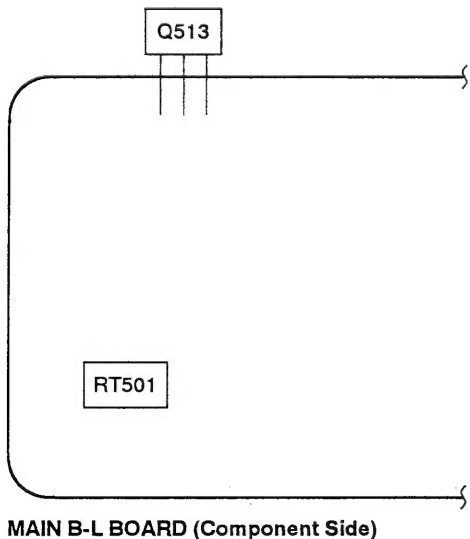
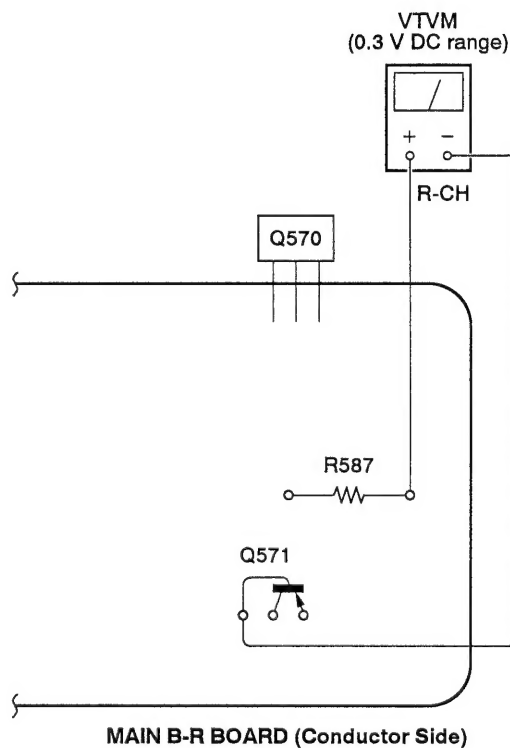
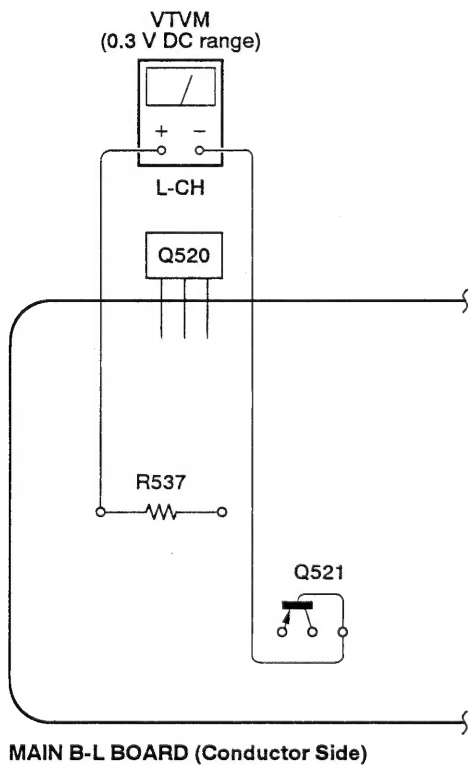
ATTENUATOR (Volume) control: minimum

Input signal: No signal input

### Procedure:

Adjust RT501 (L-CH) and RT551 (R-CH) for 45 mV reading on the VTVM.

**Adjustment Location:** MAIN B-L, B-R BOARD



## SECTION 4

### DIAGRAMS

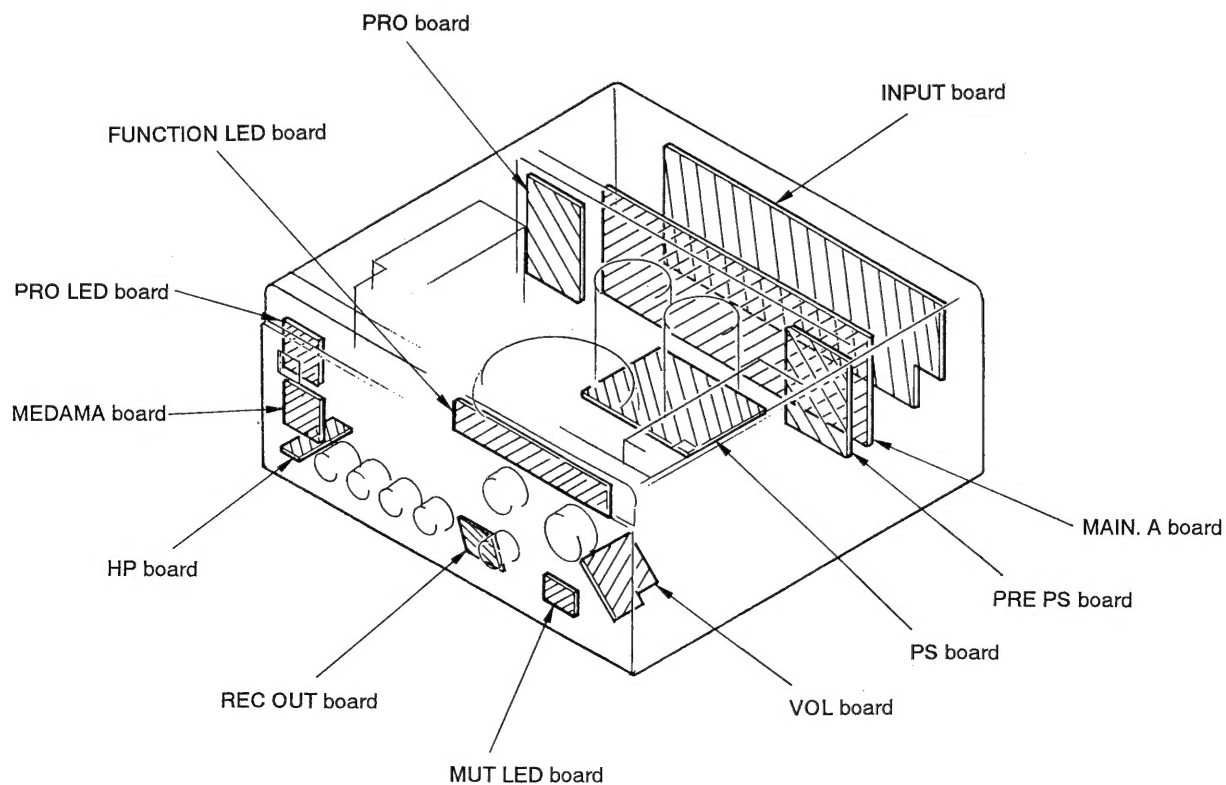
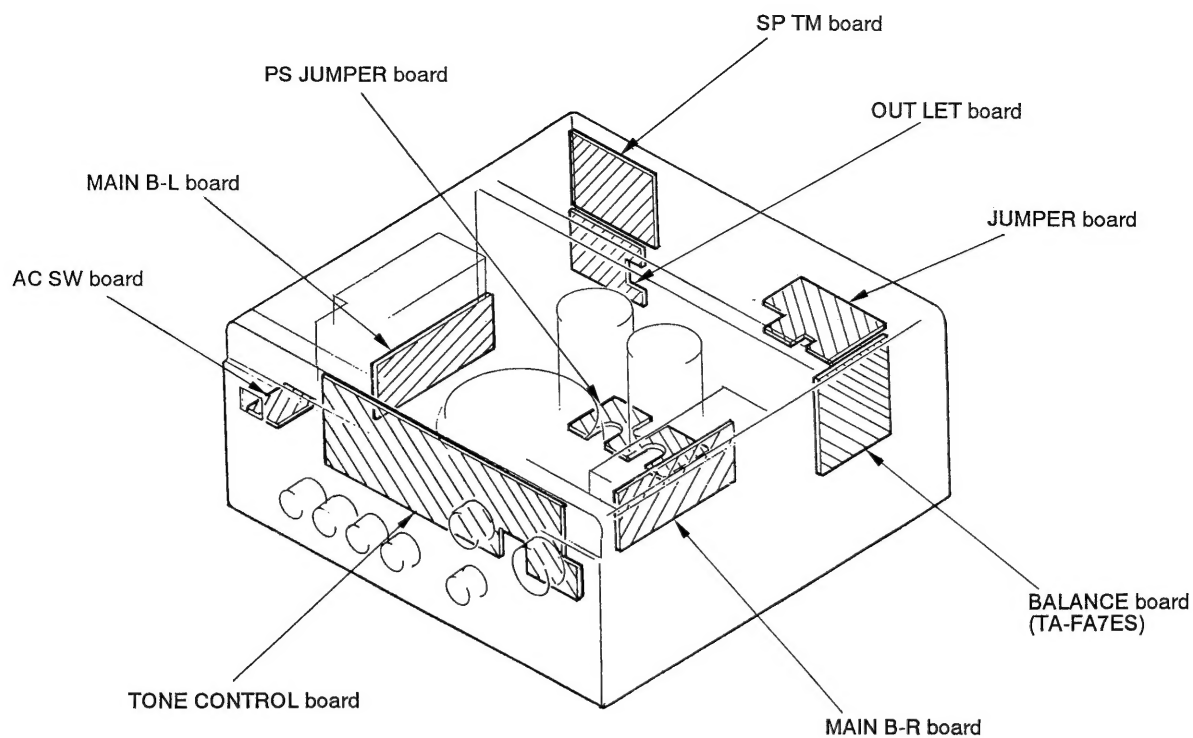
#### 4-1. IC PIN FUNCTION DESCRIPTION

##### IC901 TMP47C200BN-H327 (SYSTEM CONTROL)

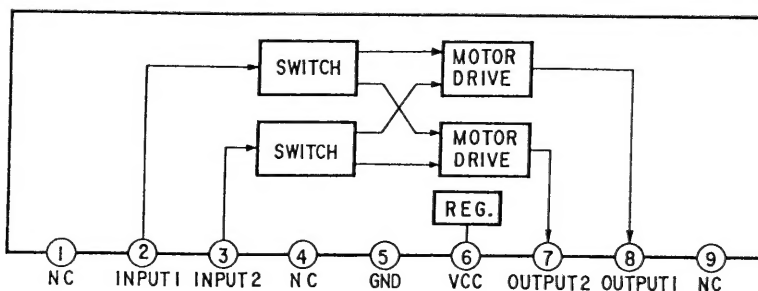
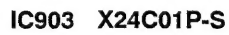
Pin No.	Pin Name	I/O	Function
1	RCL	O	Clock Data } Serial data of EEPROM (X24C01P)
2	RDT	I/O	
3	VDW	O	Down Up } VR motor control signal (Active: H, Stop: L-L, Brake: H-H)
4	VUP	O	
5	CD	O	Function relay select signal output (ON: L)
6	MUT	O	Mute control signal output when switching (Mute: H)
7	AUX	O	Function relay select signal output (ON: L)
8	T3	O	Function relay select signal output (ON: L)
9	T2	O	Function relay select signal output (ON: L)
10	T1	O	Function relay select signal output (ON: L)
11	SW0	I	Relativity position detection signal of rotary switch (One of them terminal: H, the other terminal: L) Direction from SW5 to SW0, TUNER → CD → AUX → TAPE2 → TAPE1 → PHONO → TUNER → .....
12	SW1	I	
13	SW2	I	
14	SW3	I	
15	SW4	I	
16	SW5	I	
17	PHONO	O	Function LED drive signal (ON: L)
18	TUNER	O	
19	CD	O	
20	AUX	O	
21	GND	—	GND terminal
22	TAPE1	O	Function LED drive signal (ON: L)
23	TAPE2	O	
24	TAPE3	O	
25	—	O	Not used (Connected to GND)
26	—	I	Not used (Connected to GND)
27	—	I	Not used (Connected to GND)
28	—	I	Not used (Connected to GND)
29	—	I	Not used (Connected to GND)
30	TEST	—	Test terminal (Open)
31	XIN	—	Oscillation signal 8.19 MHz
32	XOUT	—	
33	RESET	I	Reset signal (Reset: L)
34	HOLD	I	Cancellation of hold mode signal (Start: H)
35	TUNER	O	Function relay select signal output (ON: L)
36	PHONO	O	Function relay select signal output (ON: L)
37	SIRCS	I	SIRCS signal (Active: L)
38	—	O	Not used (Connected to GND)
39	—	O	Not used (Connected to GND)
40	—	O	Not used (Connected to GND)
41	—	O	Model mode switch signal (Connected to GND)
42	VDD	—	POWER supply (+5 V) terminal

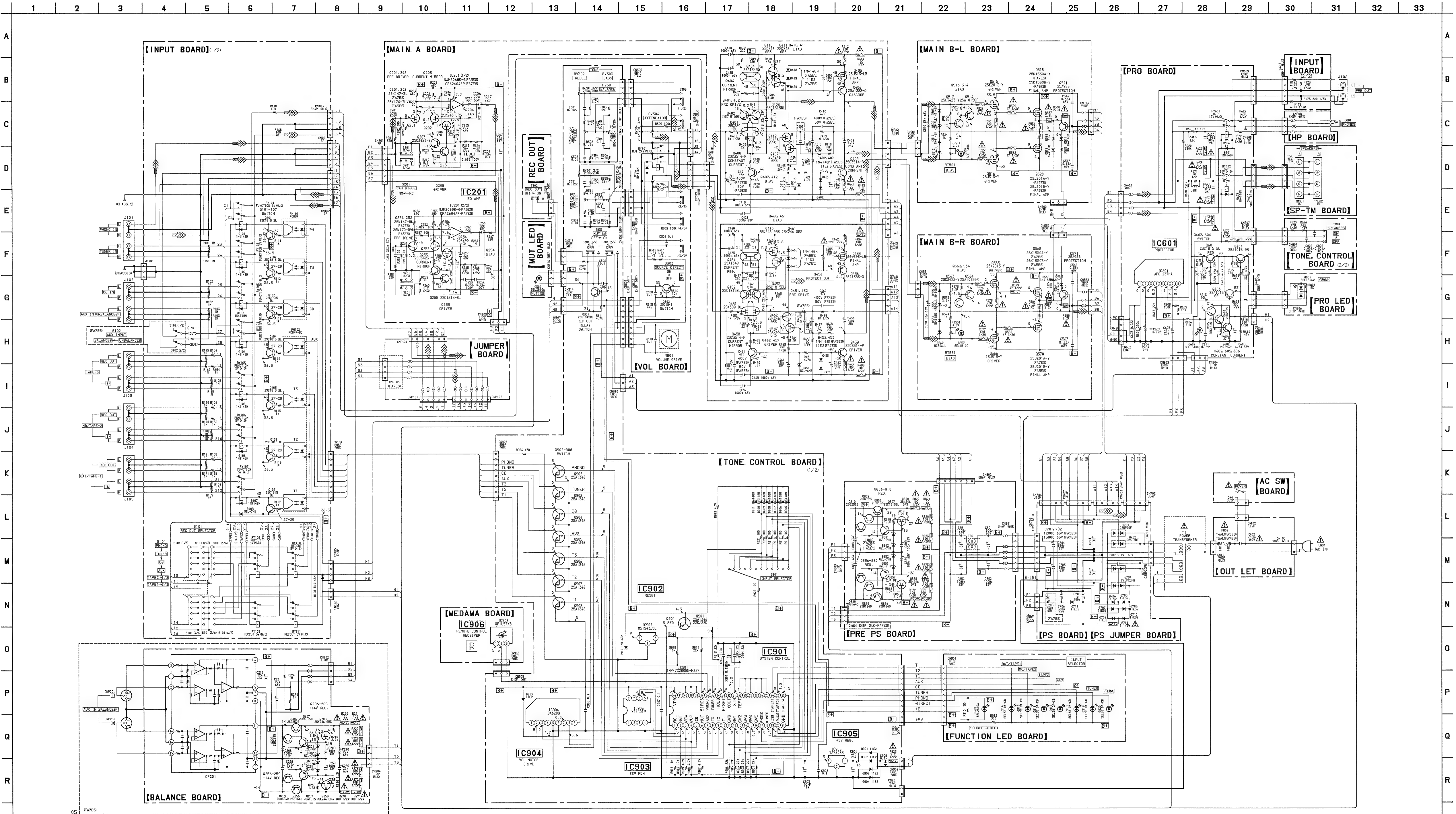


● Circuit Boards Location



IC601  $\mu$ PC1237HA



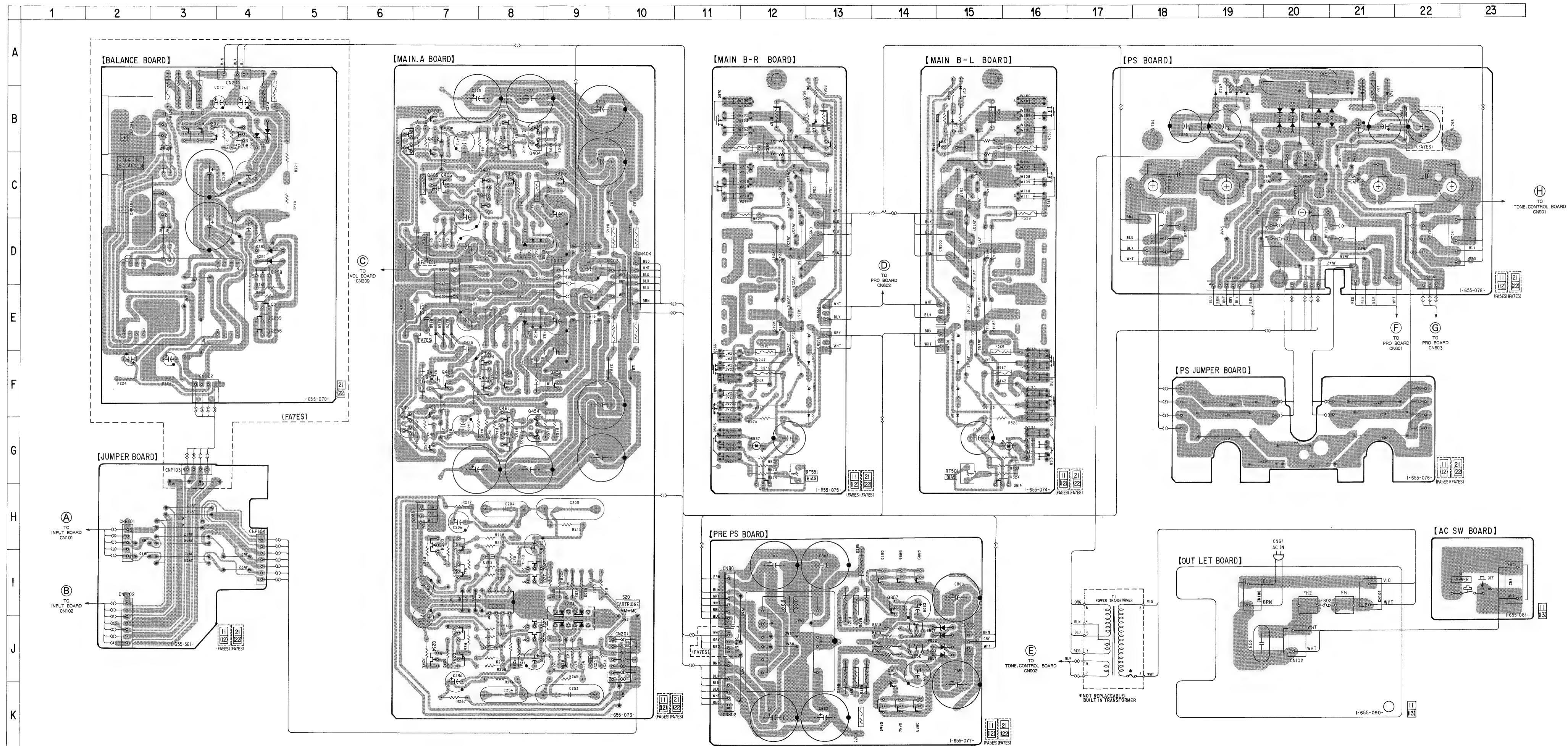


- Note:
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$  50 WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and  $\frac{1}{4}\text{W}$  or less unless otherwise specified.
  - % : indicates tolerance.
  - $\text{C}_{\text{non}}$  : nonflammable resistor.
  - $\text{F}_{\text{fuse}}$  : fusible resistor.

Note: The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

- $\text{B}+$  : B + Line.
- $\text{B}-$  : B - Line.
- $\square$  : panel designation.
- $\square$  : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (10  $\text{M}\Omega/\text{V}$ ).
- Voltage variations may be noted due to normal production tolerances.
- Signal path.
- $\gg$  : PHONO





• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
○D201	B-4	○Q251	J-8
○D202	B-4	○Q252	J-8
○D251	D-4	○Q253	J-7
○D252	D-4	○Q254	J-7
○D401	D-8	○Q255	J-7
D402	D-8	○Q256	E-4
D403	D-8	○Q257	F-4
D418	D-7	○Q258	D-4
D419	D-7	○Q259	E-4
D420	D-7	Q401	B-6
D451	E-8	Q402	B-7
D452	E-8	Q403	B-7
D453	E-8	Q404	B-8
D468	E-7	Q405	C-7
D469	E-7	Q406	C-7
D470	E-7	Q407	C-8
D505	F-15	Q408	C-8
D506	F-15	Q409	C-9
D507	G-16	Q410	B-8
D511	F-15	Q411	B-8
D512	E-15	Q412	C-8
D513	B-15	Q451	G-6
D514	B-15	Q452	G-7
D555	G-13	Q453	G-7
D556	F-13	Q454	G-8
D557	G-12	Q455	F-7
D558	F-13	Q456	F-8
D562	F-13	Q457	F-8
D564	B-13	Q458	F-9
D565	B-13	Q459	F-9
D701	B-20	Q460	G-8
D702	B-20	Q461	G-8
D703	B-20	Q462	F-8
D704	B-21	Q513	G-16
D705	B-19	Q514	H-16
D706	B-19	Q515	G-16
D707	B-19	Q516	F-16
D708	B-19	Q518	C-16
D709	B-21	Q520	B-16
D710	B-21	Q521	C-15
D711	B-21	Q563	G-11
D801	J-15	Q564	H-12
D802	J-15	Q565	F-11
D851	J-15	Q566	F-11
D852	J-15	Q568	C-11
		Q570	B-11
IC201	J-8	Q571	B-13
		Q806	I-14
Q201	I-8	Q807	I-14
Q202	I-8	Q808	J-14
Q203	I-7	Q809	I-14
Q204	I-7	Q810	I-14
○Q205	B-3	Q856	K-14
○Q206	B-3	Q857	K-14
○Q207	B-3	Q858	J-14
○Q208	B-4	Q859	K-14
○Q209	B-3	Q860	K-14

Note:  
○ : FATES ONLY

Note:  
○ : parts extracted from the component side.  
• : Pattern from the side which enables seeing.



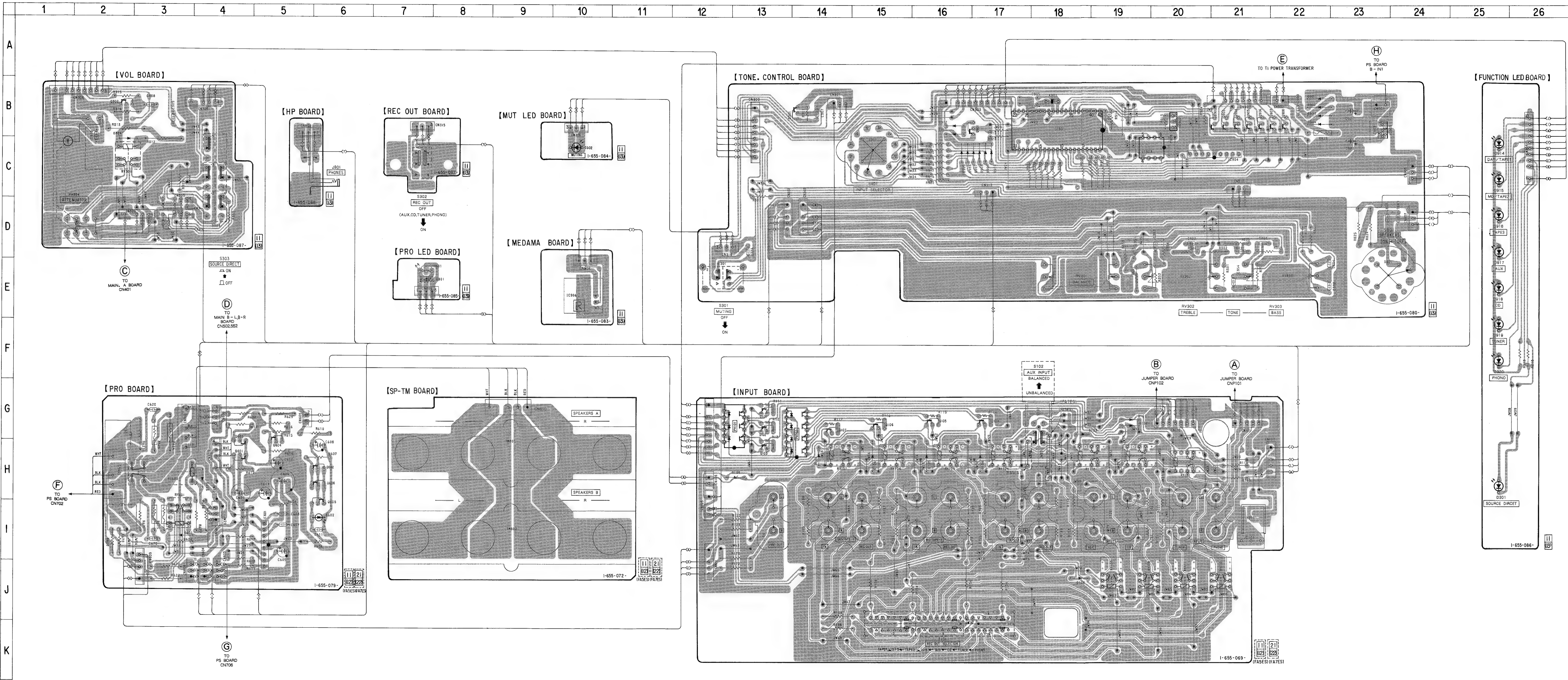
4-4. PRINTED WIRING BOARDS – CONTROL Section –

● Semiconductor Location

Ref. No.	Location
D101	G-19
D102	G-19
D103	G-18
D104	H-17
D105	H-16
D106	H-15
D107	H-14
D108	J-18
D109	H-13
D301	H-25
D302	C-10
D304	C-2
D601	I-3
D602	I-6
D603	H-4
D801	E-7
D901	B-22
D902	B-22
D903	B-22
D904	B-22
D905	C-16
D906	C-16
D907	C-17
D908	C-17
D909	C-17
D910	C-17
D911	B-16
D912	B-16
D913	C-20
D914	C-25
D915	C-25
D916	D-25
D917	D-25
D918	E-25
D919	F-25
D920	F-25
PH101	G-13
PH102	G-14
IC601	I-5
IC901	B-18
IC902	B-20
IC903	C-19
IC904	C-21
IC905	B-23
IC906	E-10
Q101	G-13
Q102	G-13
Q103	H-13
Q104	G-17
Q105	G-16
Q106	G-15
Q107	G-14
Q301	B-14
Q302	B-2
Q601	H-4
Q602	H-6
Q603	H-4
Q604	H-5
Q605	H-6
Q606	H-6
Q901	B-16
Q902	B-21
Q903	B-21
Q904	B-21
Q905	B-21
Q906	B-21
Q907	B-22
Q908	B-22

Note:

- : parts extracted from the component side.
- : Pattern from the side which enables seeing.



## EXPLODED VIEWS



NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts  
Example:  
KNOB, BALANCE (WHITE) . . . (RED)  

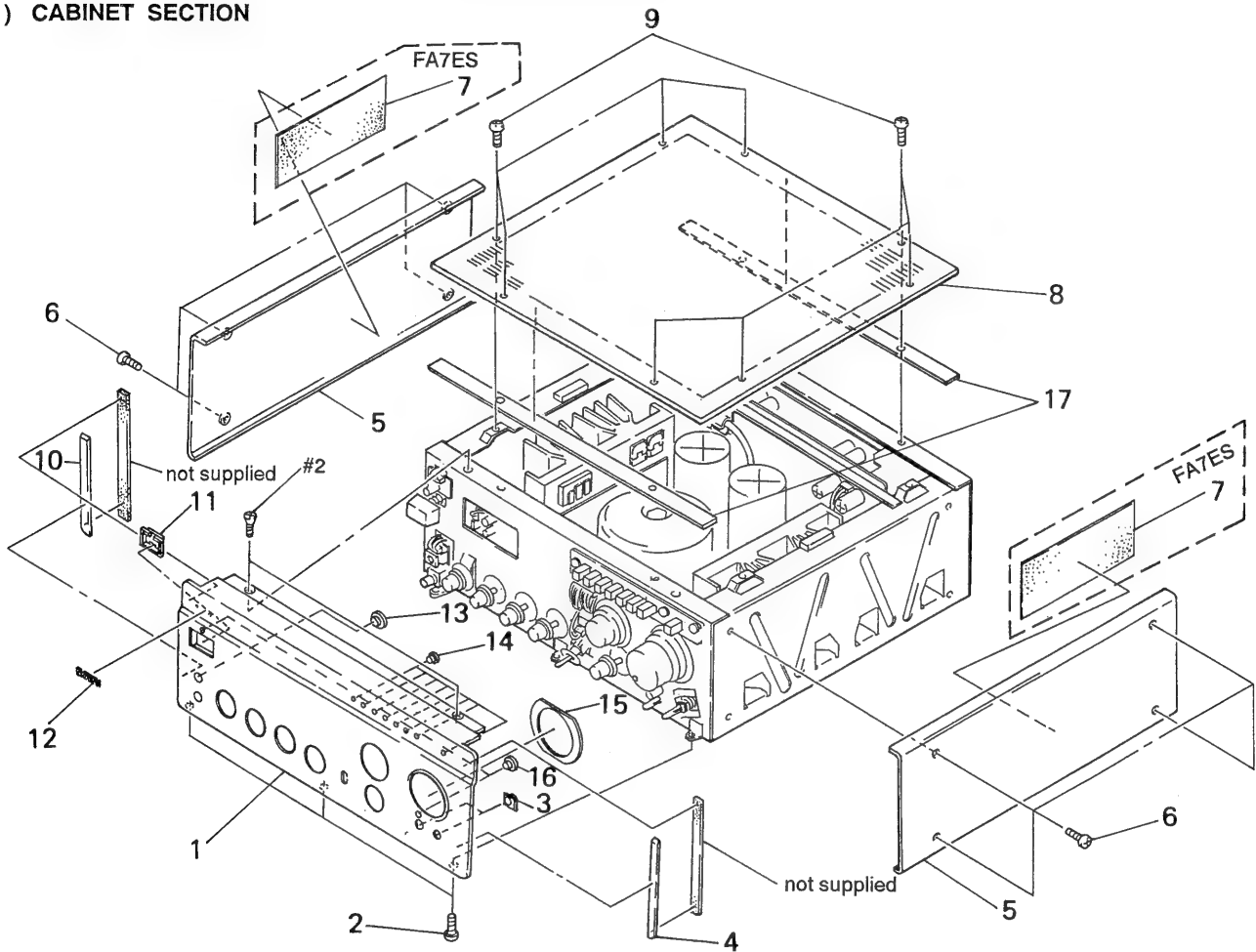
↑  
Parts Color

↑  
Cabinet's Color

- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

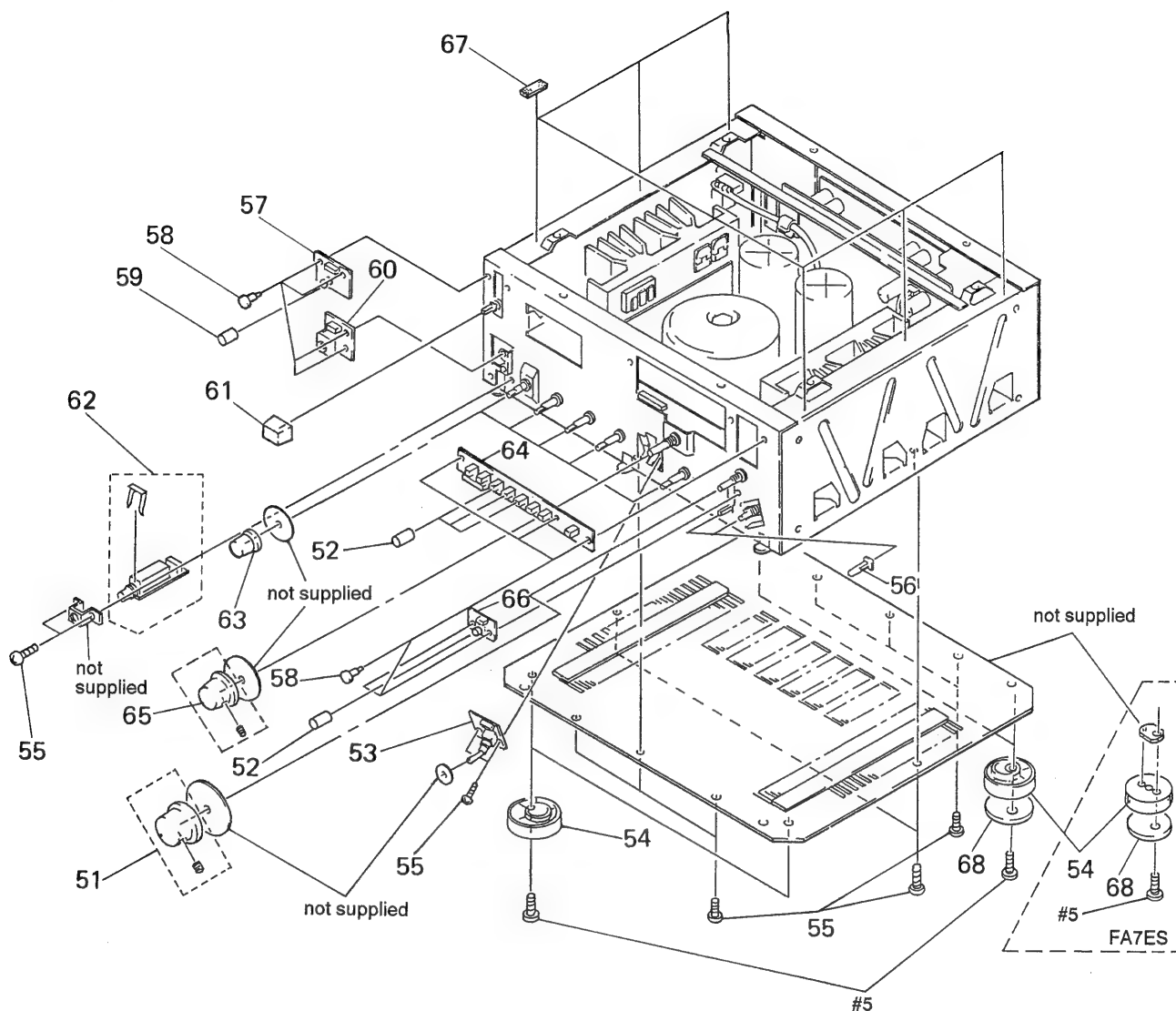
The components identified by mark  or dotted line with mark  are critical for safety.  
Replace only with part number specified.

**(1) CABINET SECTION**



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-970-139-41	PANEL, FRONT (FA5ES:BLACK)		9	4-921-439-11	SCREW (M3X8), FLAT HEAD (GOLD)	
1	4-970-139-51	PANEL, FRONT (FA5ES:GOLD)		9	4-921-439-21	SCREW (M3X8), FLAT HEAD (BLACK)	
1	4-970-139-61	PANEL, FRONT (FA7ES:BLACK)		10	4-970-141-01	PLATE (L), ORNAMENTAL (BLACK)	
1	4-970-139-71	PANEL, FRONT (FA7ES:GOLD)		10	4-970-141-11	PLATE (L), ORNAMENTAL (GOLD)	
2	3-703-685-21	SCREW (+BV 3X8)		11	4-921-415-04	ESCUTCHEON, POWER KNOB (BLACK)	
3	4-970-145-01	ESCUTCHEON (P) (BLACK)		11	4-921-415-13	ESCUTCHEON, POWER KNOB (GOLD)	
3	4-970-145-11	ESCUTCHEON (P) (GOLD)		12	4-942-568-01	EMBLEM (NO. 5), SONY (BLACK)	
4	4-970-142-01	PLATE (R), ORNAMENTAL (BLACK)		12	4-942-568-21	EMBLEM (NO. 5), SONY (GOLD)	
4	4-970-142-11	PLATE (R), ORNAMENTAL (GOLD)		13	4-970-143-01	WINDOW, LAY CATCHER (BLACK)	
5	4-970-140-01	PANEL, SIDE (BLACK)		13	4-970-143-11	WINDOW, LAY CATCHER (GOLD)	
5	4-970-140-11	PANEL, SIDE (GOLD)		14	4-969-325-11	LENS, LED	
6	4-924-242-11	SCREW (M3X6), FLAT HEAD (BLACK)		15	4-970-144-01	PLATE (V), ORNAMENTAL (BLACK)	
6	4-924-242-61	SCREW (M3X6), FLAT HEAD (GOLD)		15	4-970-144-11	PLATE (V), ORNAMENTAL (GOLD)	
7	4-971-842-01	FELT (FA7ES)		16	4-970-486-01	LENS, LED	
* 8	4-969-333-21	BOARD, TOP (BLACK)		17	4-969-347-01	CUSHION	
* 8	4-969-333-31	BOARD, TOP (GOLD)					

## (2) FRONT PANEL SECTION





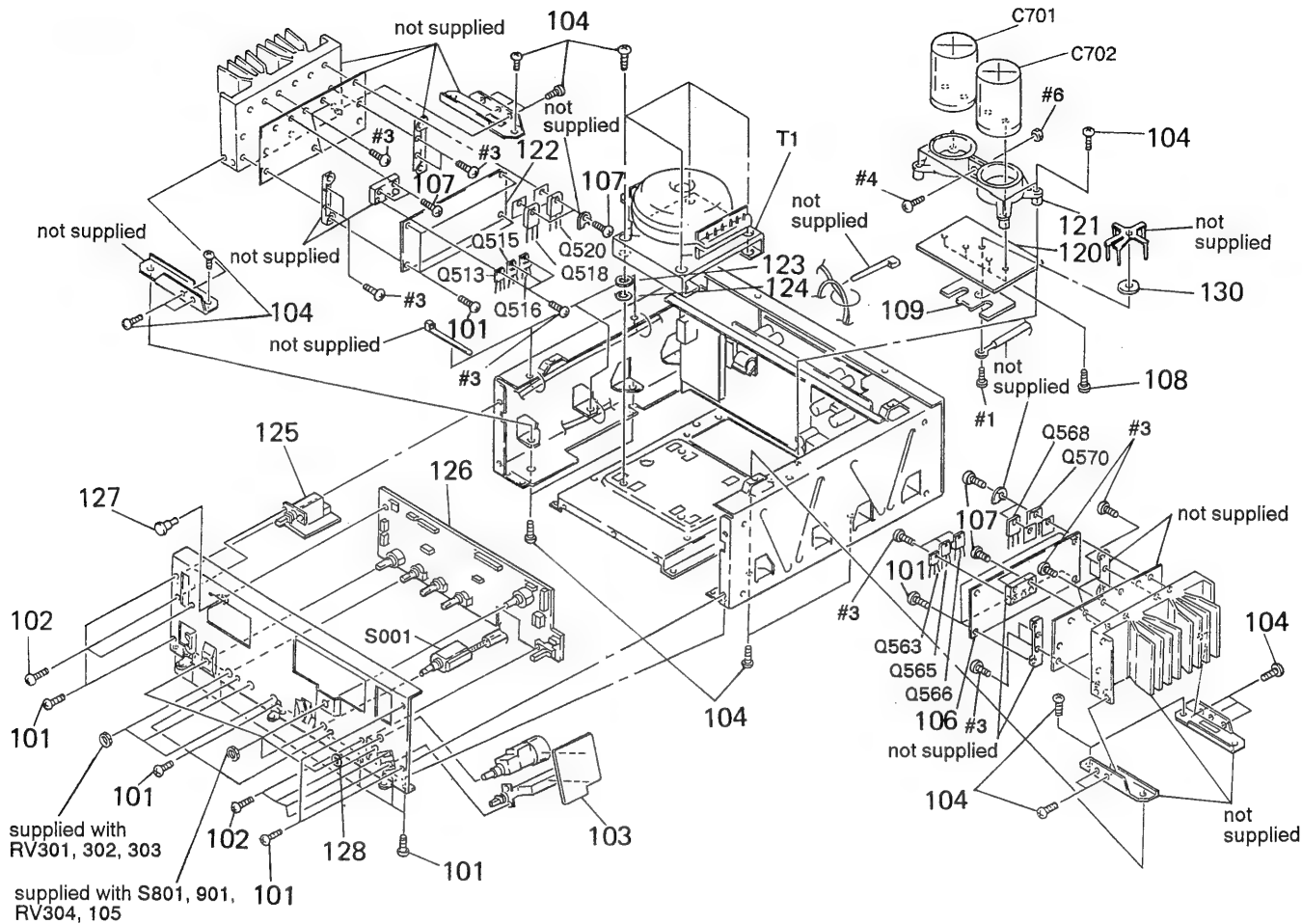
Ref. No.	Part No.	Description	Remark
51	X-4945-357-1	KNOB (VB) ASSY (BLACK)	
51	X-4945-359-1	KNOB (VG) ASSY (GOLD)	
* 52	4-971-833-01	TUBE (A), LIGHT INTERCEPTION	
* 53	1-655-082-11	REC OUT BOARD	
54	4-970-123-01	FOOT (F50180S) (FA5ES)	
54	4-970-487-01	FOOT (F50180S) (FA7ES)	
55	4-967-961-01	SCREW (3X8) (SPECIAL)	
56	4-970-146-01	BUTTON (BLACK)	
56	4-970-146-11	BUTTON (GOLD)	
* 57	1-655-085-11	PRO LED BOARD	
58	4-812-134-00	RIVET (DIA. 3.5), NYLON	
* 59	4-971-834-01	TUBE (B), LIGHT INTERCEPTION	

Ref. No.	Part No.	Description	Remark
* 60	1-655-083-11	MEDAMA BOARD	
61	4-942-032-01	KNOB (POWER) (BLACK)	
61	4-942-032-11	KNOB (POWER) (GOLD)	
* 62	1-655-088-11	HP BOARD	
63	4-970-152-01	KNOB (R) (BLACK)	
63	4-970-152-11	KNOB (R) (GOLD)	
* 64	1-655-086-11	FUNCTION LED BOARD	
65	4-970-148-01	KNOB (I) (BLACK)	
65	4-970-148-11	KNOB (I) (GOLD)	
* 66	1-655-084-11	MUT LED BOARD	
67	4-969-896-01	SPACER	
68	4-972-889-01	CUSHION	



### (3) CHASSIS SECTION

Note: The components identified by mark  or dotted line with mark  are critical for safety.  
Replace only with part number specified.

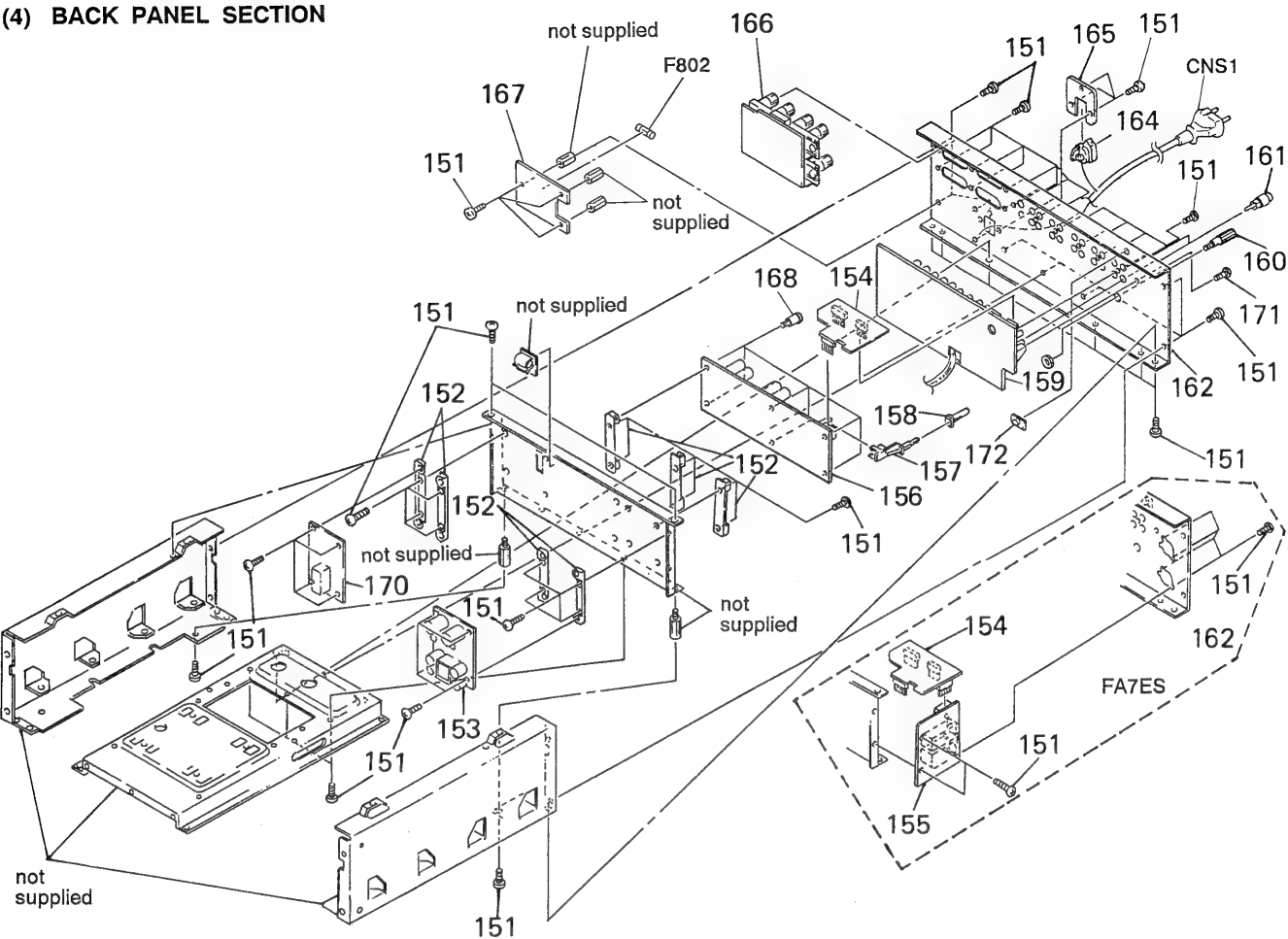




Ref. No.	Part No.	Description	Remark
101	4-967-961-01	SCREW (3X8) (SPECIAL)	
102	4-967-959-01	SCREW (3X6)	
* 103	1-655-087-11	VOL BOARD	
104	4-967-960-01	SCREW (4X8)	
* 106	1-655-075-11	MAIN B-R BOARD (FA5ES)	
* 106	1-655-075-21	MAIN B-R BOARD (FA7ES)	
107	4-956-589-01	SCREW (3X14), +B (COPPER PLATING)	
* 108	4-931-964-01	SCREW (M4X6)	
* 109	1-655-076-11	PS JUMPER BOARD (FA5ES)	
* 109	1-655-076-21	PS JUMPER BOARD (FA7ES)	
* 120	1-655-078-11	PS BOARD (FA5ES)	
* 120	1-655-078-21	PS BOARD (FA7ES)	
* 121	4-970-132-01	HOLDER (C)	
* 122	1-655-074-11	MAIN B-L BOARD (FA5ES)	
* 122	1-655-074-21	MAIN B-L BOARD (FA7ES)	
* 123	3-333-771-01	WASHER	
* 124	3-576-989-01	SHEET, ADHESIVE	
* 125	1-655-081-11	AC SW BOARD	
* 126	A-4371-831-A	TONE CONTROL BOARD, COMPLETE	
127	4-812-134-00	RIVET (DIA. 3.5), NYLON	
128	4-972-113-01	WASHER	
* 130	3-555-872-21	SPACER	

Ref. No.	Part No.	Description	Remark
C701	1-104-902-11	CAP, ELECT 15000uF (FA7ES)	
C701	1-107-845-12	CAP, ELECT 12000uF (FA5ES)	
C702	1-104-902-11	CAP, ELECT 15000uF (FA7ES)	
C702	1-107-845-12	CAP, ELECT 12000uF (FA5ES)	
Q513	8-729-203-45	TRANSISTOR 2SC3423-0	
Q515	8-729-018-19	TRANSISTOR 2SK2013-Y	
Q516	8-729-018-21	TRANSISTOR 2SJ313-Y	
Q518	8-729-018-11	TRANSISTOR 2SK1530A-Y (FA7ES)	
Q518	8-729-030-14	TRANSISTOR 2SK1530B-Y (FA5ES)	
Q520	8-729-018-13	TRANSISTOR 2SJ201A-Y (FA7ES)	
Q520	8-729-030-15	TRANSISTOR 2SJ201B-Y (FA5ES)	
Q563	8-729-203-45	TRANSISTOR 2SC3423-0	
Q565	8-729-018-19	TRANSISTOR 2SK2013-Y	
Q566	8-729-018-21	TRANSISTOR 2SJ313-Y	
Q568	8-729-018-11	TRANSISTOR 2SK1530A-Y (FA7ES)	
Q568	8-729-030-14	TRANSISTOR 2SK1530B-Y (FA5ES)	
Q570	8-729-018-13	TRANSISTOR 2SJ201A-Y (FA7ES)	
Q570	8-729-030-15	TRANSISTOR 2SJ201B-Y (FA5ES)	
S001	1-762-185-11	SWITCH, ROTARY SLIDE (REC OUT SELECTOR)	
△T1	1-429-111-11	TRANSFORMER, POWER (FA5ES)	
△T1	1-429-112-11	TRANSFORMER, POWER (FA7ES)	






(4) BACK PANEL SECTION



Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
151	4-967-961-01	SCREW (3X8) (SPECIAL)	
* 152	4-969-344-01	HOLDER (P) (FA7ES)	
* 153	1-655-077-11	PRE PS BOARD (FA5ES)	
* 153	1-655-077-21	PRE PS BOARD (FA7ES)	
* 154	1-655-361-11	JUMPER BOARD (FA5ES)	
* 154	1-655-361-21	JUMPER BOARD (FA7ES)	
* 155	A-4378-510-A	BALANCE BOARD, COMPLETE (FA7ES)	
* 156	A-4378-507-A	MAIN. A BOARD, COMPLETE (FA5ES)	
* 156	A-4378-519-A	MAIN. A BOARD, COMPLETE (FA7ES)	
* 157	4-970-147-01	ROD	
158	4-970-146-01	BUTTON (BLACK)	
* 159	A-4378-506-A	INPUT BOARD, COMPLETE (FA5ES)	
* 159	A-4378-518-A	INPUT BOARD, COMPLETE (FA7ES)	
* 160	1-535-691-21	TERMINAL (FA5ES)	
* 160	1-535-691-31	TERMINAL (FA7ES)	
161	1-506-113-00	SHORT PLUG	

Ref. No.	Part No.	Description	Remark
* 162	4-975-263-01	PANEL, BACK (FA5ES)	
* 162	4-975-263-11	PANEL, BACK (FA7ES)	
164	2-352-626-01	BUSHING, CORD	
* 165	4-923-873-01	BRACKET, CORD STOPPER	
* 166	1-655-072-11	SP-TM BOARD (FA5ES)	
* 166	1-655-072-21	SP-TM BOARD (FA7ES)	
* 167	1-655-071-11	OUT LET BOARD	
168	4-973-106-01	SCREW, COLLAR	
* 170	A-4378-503-A	PRO BOARD, COMPLETE (FA5ES)	
* 170	A-4378-516-A	PRO BOARD, COMPLETE (FA7ES)	
171	3-703-685-21	SCREW (+BV 3X8)	
172	4-970-145-01	ESCUTCHEON (P) (BLACK)	
 CNS1	1-575-953-11	CORD, POWER	
 F802	1-532-299-00	FUSE, TIME-LAG (T5A 250V) (FA7ES)	
 F802	1-532-350-00	FUSE, TIME-LAG (T4A 250V) (FA5ES)	

SECTION 6  
ELECTRICAL PARTS LIST

AC SW

BALANCE

FUNCTION LED

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms.  
METAL: Metal-film resistor.  
METAL OXIDE: Metal oxide-film resistor.  
F: nonflammable

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA...:  $\mu$ A.. uPA...:  $\mu$ PA..  
uPB...:  $\mu$ PB.. uPC...:  $\mu$ PC.. uPD...:  $\mu$ PD..
- CAPACITORS  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	1-655-081-11	AC SW BOARD *****				< TRANSISTOR >	
		< CONNECTOR >		Q206	8-729-030-18	TRANSISTOR 2SD2525	
CN4	1-580-629-11	PIN, CONNECTOR 2P		Q207	8-729-281-54	TRANSISTOR 2SC1815-BL	
		< SWITCH >		Q208	8-729-202-67	TRANSISTOR 2SK246-GR3	
$\Delta$ S1	1-554-538-00	SWITCH, PUSH (AC POWER) (1 KEY) (POWER) *****		Q209	8-729-030-18	TRANSISTOR 2SD2525	
*	A-4378-510-A	BALANCE BOARD, COMPLETE (FA7ES) *****		Q256	8-729-030-19	TRANSISTOR 2SB1640	
		< CAPACITOR >		Q257	8-729-201-53	TRANSISTOR 2SA1015-GR	
C208	1-110-397-11	ELECT 1000uF 20% 63V		Q258	8-729-202-67	TRANSISTOR 2SK246-GR3	
C209	1-110-393-11	ELECT 100uF 20% 63V		Q259	8-729-030-19	TRANSISTOR 2SB1640	
C210	1-110-390-11	ELECT 22uF 20% 63V				< RESISTOR >	
C211	1-110-390-11	ELECT 22uF 20% 63V		R210	1-249-931-11	CARBON 2.2K 5% 1/4W	
C258	1-110-397-11	ELECT 1000uF 20% 63V		R218	1-259-171-21	CARBON 1.5K 5% 1/4W	
C259	1-110-393-11	ELECT 100uF 20% 63V		$\Delta$ R220	1-219-022-11	FUSIBLE 100 5% 1/2W F	
C260	1-110-390-11	ELECT 22uF 20% 63V		$\Delta$ R221	1-219-022-11	FUSIBLE 100 5% 1/2W F	
C261	1-110-390-11	ELECT 22uF 20% 63V		$\Delta$ R222	1-219-022-11	FUSIBLE 100 5% 1/2W F	
		< CONNECTOR >		$\Delta$ R223	1-219-022-11	FUSIBLE 100 5% 1/2W F	
* CN202	1-565-480-11	CONNECTOR, BOARD TO BOARD 4P		R224	1-124-995-11	CARBON 1M 5% 1/4W	
CN204	1-691-765-21	PLUG (MICRO CONNECTOR) 3P		R260	1-249-931-11	CARBON 2.2K 5% 1/4W	
CNP201	1-766-803-11	CONNECTOR (CANON)		R268	1-259-171-21	CARBON 1.5K 5% 1/4W	
CNP251	1-766-803-11	CONNECTOR (CANON)		$\Delta$ R270	1-219-022-11	FUSIBLE 100 5% 1/2W F	
		< COMPOSITION CIRCUIT BLOCK >		$\Delta$ R271	1-219-022-11	FUSIBLE 100 5% 1/2W F	
CP201	1-233-250-11	ENCAPSULATED COMPONENT		$\Delta$ R272	1-219-022-11	FUSIBLE 100 5% 1/2W F	
		< DIODE >		$\Delta$ R273	1-219-022-11	FUSIBLE 100 5% 1/2W F	
D201	8-719-000-93	DIODE UZL-7H1		R274	1-124-995-11	CARBON 1M 5% 1/4W	
D202	8-719-000-93	DIODE UZL-7H1				*****	
D251	8-719-000-93	DIODE UZL-7H1		*	1-655-086-11	FUNCTION LED BOARD *****	
D252	8-719-000-93	DIODE UZL-7H1				< CONNECTOR >	
				CN904	1-691-772-11	PLUG (MICRO CONNECTOR) 10P	
						< DIODE >	
				D301	8-719-301-49	LED SEL2810A (SURCE DIRECT)	
				D914	8-719-313-72	LED SEL3810A-CD (DAT/TAPE1)	
				D915	8-719-313-72	LED SEL3810A-CD (MD/TAPE2)	
				D916	8-719-313-72	LED SEL3810A-CD (TAPE3)	
				D917	8-719-313-72	LED SEL3810A-CD (AUX)	

# FUNCTION LED

# HP

# INPUT

Ref. No.	Part No.	Description	Remark
D918	8-719-313-72	LED SEL3810A-CD (CD)	
D919	8-719-313-72	LED SEL3810A-CD (TUNER)	
D920	8-719-313-72	LED SEL3810A-CD (PHONO)	
< RESISTOR >			
R310	1-249-407-11	CARBON 150 5% 1/4W	
R912	1-249-411-11	CARBON 330 5% 1/4W	
*****			
*	1-655-088-11	HP BOARD	
*****			
< CONNECTOR >			
* CN808	1-564-506-11	PLUG, CONNECTOR 3P	
< JACK >			
J801	1-507-796-71	JACK (PHONES)	
*****			
*	A-4378-506-A	INPUT BOARD, COMPLETE (FA5ES)	
*	A-4378-518-A	INPUT BOARD, COMPLETE (FA7ES)	
*****			
*	1-535-730-21	LEAD, JUMPER (OFC)	
< CONNECTOR >			
* CN101	1-565-481-11	CONNECTOR, BOARD TO BOARD 5P	
* CN102	1-565-483-11	CONNECTOR, BOARD TO BOARD 7P	
CN103	1-691-766-21	PLUG (MICRO CONNECTOR) 4P	
CN104	1-691-770-11	PLUG (MICRO CONNECTOR) 8P	
CN105	1-691-765-11	PLUG (MICRO CONNECTOR) 3P	
CN106	1-564-505-11	PLUG, CONNECTOR 2P	
CN611	1-691-766-11	PLUG (MICRO CONNECTOR) 4P	
< DIODE >			
D101	8-719-987-63	DIODE 1N4148M	
D102	8-719-987-63	DIODE 1N4148M	
D103	8-719-987-63	DIODE 1N4148M	
D104	8-719-987-63	DIODE 1N4148M	
D105	8-719-987-63	DIODE 1N4148M	
D106	8-719-987-63	DIODE 1N4148M	
D107	8-719-987-63	DIODE 1N4148M	
D108	8-719-987-63	DIODE 1N4148M	
D109	8-719-000-93	DIODE UZL-7H1	
< JACK >			
J101	1-766-895-21	JACK, PIN 4P (PHONO TUNER)	
J102	1-766-895-21	JACK, PIN 4P (AUX CD)	
J103	1-766-895-11	JACK, PIN 4P (TAPE-3) (FA5ES)	
J103	1-766-895-21	JACK, PIN 4P (TAPE-3) (FA7ES)	

Ref. No.	Part No.	Description	Remark
J104	1-766-895-11	JACK, PIN 4P (MD/TAPE-2) (FA5ES)	
J104	1-766-895-21	JACK, PIN 4P (MD/TAPE-2) (FA7ES)	
J105	1-766-895-11	JACK, PIN 4P (DAT/TAPE-1) (FA5ES)	
J105	1-766-895-21	JACK, PIN 4P (DAT/TAPE-1) (FA7ES)	
J106	1-766-894-31	JACK 2P (PRE OUT) (FA5ES)	
J106	1-766-894-41	JACK 2P (PRE OUT) (FA7ES)	
< PHOTO INTERRUPTER >			
PH101	8-719-946-27	DIODE PC837	
PH102	8-719-936-58	PHOTO COUPLER PC847-BC	
< TRANSISTOR >			
Q101	8-729-281-54	TRANSISTOR 2SC1815-BL	
Q102	8-729-281-54	TRANSISTOR 2SC1815-BL	
Q103	8-729-281-54	TRANSISTOR 2SC1815-BL	
Q104	8-729-281-54	TRANSISTOR 2SC1815-BL	
Q105	8-729-281-54	TRANSISTOR 2SC1815-BL	
Q106	8-729-281-54	TRANSISTOR 2SC1815-BL	
Q107	8-729-281-54	TRANSISTOR 2SC1815-BL	
< RESISTOR >			
R101	1-124-995-11	CARBON 1M 5% 1/4W	
R102	1-124-995-11	CARBON 1M 5% 1/4W	
R103	1-124-995-11	CARBON 1M 5% 1/4W	
R104	1-259-167-21	CARBON 1K 5% 1/4W	
R105	1-124-995-11	CARBON 1M 5% 1/4W	
R106	1-259-167-21	CARBON 1K 5% 1/4W	
R107	1-124-995-11	CARBON 1M 5% 1/4W	
R108	1-259-167-21	CARBON 1K 5% 1/4W	
R109	1-124-995-11	CARBON 1M 5% 1/4W	
R111	1-259-167-21	CARBON 1K 5% 1/4W	
R112	1-259-167-21	CARBON 1K 5% 1/4W	
R113	1-259-167-21	CARBON 1K 5% 1/4W	
R114	1-259-167-21	CARBON 1K 5% 1/4W	
R115	1-259-167-21	CARBON 1K 5% 1/4W	
R116	1-259-167-21	CARBON 1K 5% 1/4W	
R117	1-259-167-21	CARBON 1K 5% 1/4W	
R118	1-259-143-21	CARBON 100 5% 1/4W	
R119	1-124-995-11	CARBON 1M 5% 1/4W	
R120	1-124-995-11	CARBON 1M 5% 1/4W	
R121	1-124-995-11	CARBON 1M 5% 1/4W	
R122	1-249-226-11	CARBON 4.7K 5% 1/3W	
R123	1-249-194-11	CARBON 220 5% 1/3W	
R151	1-124-995-11	CARBON 1M 5% 1/4W	
R152	1-124-995-11	CARBON 1M 5% 1/4W	
R153	1-124-995-11	CARBON 1M 5% 1/4W	
R154	1-259-167-21	CARBON 1K 5% 1/4W	
R155	1-124-995-11	CARBON 1M 5% 1/4W	

## INPUT

## JUMPER

## MAIN. A

Ref. No.	Part No.	Description	Remark
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R156	1-259-167-21	CARBON	1K 5% 1/4W
R157	1-124-995-11	CARBON	1M 5% 1/4W
R158	1-259-167-21	CARBON	1K 5% 1/4W

R159	1-124-995-11	CARBON	1M 5% 1/4W
R168	1-259-143-21	CARBON	100 5% 1/4W
R169	1-124-995-11	CARBON	1M 5% 1/4W
R170	1-124-995-11	CARBON	1M 5% 1/4W
R171	1-124-995-11	CARBON	1M 5% 1/4W

R172	1-249-226-11	CARBON	4.7K 5% 1/3W
R173	1-249-194-11	CARBON	220 5% 1/3W

## &lt; RELAY &gt;

RY101	1-755-060-11	RELAY	
RY102	1-755-060-11	RELAY	
RY103	1-755-060-11	RELAY	
RY104	1-755-060-11	RELAY	
RY105	1-755-060-11	RELAY	

RY106	1-755-060-11	RELAY	
RY107	1-755-060-11	RELAY	
RY108	1-755-060-11	RELAY	
RY109	1-755-060-11	RELAY	
RY110	1-755-060-11	RELAY	

RY111	1-755-060-11	RELAY	
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## &lt; SWITCH &gt;

S101	1-570-076-11	SWITCH, SLIDE (REMOTE TYPE)	(REC OUT SELECTOR)
S102	1-762-181-11	SWITCH, SLIDE (AUX INPUT) (FA7ES)	

## &lt; BRACKET &gt;

\* YB101 4-946-336-01 BRACKET (GROUND)

\*\*\*\*\*

\* 1-655-361-11 JUMPER BOARD (FA5ES)

\* 1-655-361-21 JUMPER BOARD (FA7ES)

\*\*\*\*\*

## &lt; CONNECTOR &gt;

\* CNP101 1-560-531-11 PIN, CONNECTOR 5P

\* CNP102 1-560-532-00 PIN, CONNECTOR 7P

\* CNP103 1-506-509-11 PIN, CONNECTOR 4P (FA7ES)

\* CNP104 1-560-532-00 PIN, CONNECTOR 7P

\*\*\*\*\*

\* A-4378-507-A MAIN. A BOARD, COMPLETE (FA5ES)

\* A-4378-519-A MAIN. A BOARD, COMPLETE (FA7ES)

\*\*\*\*\*

\* 1-535-730-21 LEAD, JUMPER (OFC)

Ref. No.	Part No.	Description	Remark
----------	----------	-------------	--------

## &lt; CAPACITOR &gt;

C201	1-104-290-11	POLYSTYRENE 330PF	5% 50V
C202	1-130-973-00	FILM 0.022uF	2% 100V
C203	1-130-341-00	FILM 0.056uF	2% 100V
C204	1-130-971-00	FILM 0.016uF	2% 100V
C205	1-124-929-11	ELECT 22uF	20% 100V (FA5ES)

C205	1-110-390-11	ELECT 22uF	20% 63V (FA7ES)
C206	1-124-929-11	ELECT 22uF	20% 100V (FA5ES)
C206	1-110-390-11	ELECT 22uF	20% 63V (FA7ES)
C207	1-124-929-11	ELECT 22uF	20% 100V (FA5ES)
C207	1-110-390-11	ELECT 22uF	20% 63V (FA7ES)

C251	1-104-290-11	POLYSTYRENE 330PF	5% 50V
C252	1-130-973-00	FILM 0.022uF	2% 100V
C253	1-130-341-00	FILM 0.056uF	2% 100V
C254	1-130-971-00	FILM 0.016uF	2% 100V
C255	1-124-929-11	ELECT 22uF	20% 100V (FA5ES)

C255	1-110-390-11	ELECT 22uF	20% 63V (FA7ES)
C256	1-124-929-11	ELECT 22uF	20% 100V (FA5ES)
C256	1-110-390-11	ELECT 22uF	20% 63V (FA7ES)
C257	1-124-929-11	ELECT 22uF	20% 100V (FA5ES)
C257	1-110-390-11	ELECT 22uF	20% 63V (FA7ES)

C401	1-104-274-11	POLYSTYRENE 47PF	10% 50V (FA5ES)
C401	1-104-322-11	POLYSTYRENE 47PF	10% 400V (FA7ES)
C402	1-136-810-11	FILM 220PF	5% 100V
C405	1-126-025-11	ELECT 330uF	20% 25V
C406	1-126-025-11	ELECT 330uF	20% 25V

C408	1-110-390-11	ELECT 22uF	20% 63V
C409	1-110-512-11	FILM 1uF	10% 50V (FA7ES)
C410	1-104-274-11	POLYSTYRENE 47PF	10% 50V (FA5ES)
C410	1-104-322-11	POLYSTYRENE 47PF	10% 400V (FA7ES)
C411	1-126-025-11	ELECT 330uF	20% 25V

C412	1-126-025-11	ELECT 330uF	20% 25V
C413	1-110-390-11	ELECT 22uF	20% 63V
C418	1-110-397-11	ELECT 1000uF	20% 63V
C419	1-110-397-11	ELECT 1000uF	20% 63V
C425	1-128-474-11	ELECT 1000uF	20% 63V

C426	1-128-474-11	ELECT 1000uF	20% 63V
C451	1-104-274-11	POLYSTYRENE 47PF	10% 50V (FA5ES)
C451	1-104-322-11	POLYSTYRENE 47PF	10% 400V (FA7ES)
C452	1-136-810-11	FILM 220PF	5% 100V
C455	1-126-025-11	ELECT 330uF	20% 25V

C456	1-126-025-11	ELECT 330uF	20% 25V
C458	1-110-390-11	ELECT 22uF	20% 63V
C459	1-110-512-11	FILM 1uF	10% 50V (FA7ES)
C460	1-104-274-11	POLYSTYRENE 47PF	10% 50V (FA5ES)
C460	1-104-322-11	POLYSTYRENE 47PF	10% 400V (FA7ES)

C461	1-126-025-11	ELECT 330uF	20% 25V
C462	1-126-025-11	ELECT 330uF	20% 25V

# MAIN. A

Ref. No.	Part No.	Description	Remark
C463	1-110-390-11	ELECT 22uF 20% 63V	
C468	1-110-397-11	ELECT 1000uF 20% 63V	
C469	1-110-397-11	ELECT 1000uF 20% 63V	
C475	1-128-474-11	ELECT 1000uF 20% 63V	
C476	1-128-474-11	ELECT 1000uF 20% 63V	

## < CONNECTOR >

* CN201	1-565-483-11	CONNECTOR, BOARD TO BOARD 7P	
* CN203	1-564-506-11	PLUG, CONNECTOR 3P	
CN401	1-691-766-11	PLUG (MICRO CONNECTOR) 4P	
CN402	1-691-766-31	PLUG (MICRO CONNECTOR) 4P	
CN403	1-691-766-21	PLUG (MICRO CONNECTOR) 4P	
CN404	1-564-510-11	PLUG (MICRO CONNECTOR) 6P	

## < DIODE >

D401	8-719-933-41	DIODE HZS6C3L	
D402	8-719-987-63	DIODE 1N4148M (FA5ES)	
D402	8-719-200-02	DIODE 10E2 (FA7ES)	
D403	8-719-987-63	DIODE 1N4148M (FA5ES)	
D403	8-719-200-02	DIODE 10E2 (FA7ES)	
D418	8-719-987-63	DIODE 1N4148M (FA5ES)	
D418	8-719-200-02	DIODE 10E2 (FA7ES)	
D419	8-719-987-63	DIODE 1N4148M (FA5ES)	
D419	8-719-200-02	DIODE 10E2 (FA7ES)	
D420	8-719-987-63	DIODE 1N4148M (FA5ES)	
D420	8-719-200-02	DIODE 10E2 (FA7ES)	
D451	8-719-933-41	DIODE HZS6C3L	
D452	8-719-987-63	DIODE 1N4148M (FA5ES)	
D452	8-719-200-02	DIODE 10E2 (FA7ES)	
D453	8-719-987-63	DIODE 1N4148M (FA5ES)	
D453	8-719-200-02	DIODE 10E2 (FA7ES)	
D468	8-719-987-63	DIODE 1N4148M (FA5ES)	
D468	8-719-200-02	DIODE 10E2 (FA7ES)	
D469	8-719-987-63	DIODE 1N4148M (FA5ES)	
D469	8-719-200-02	DIODE 10E2 (FA7ES)	
D470	8-719-987-63	DIODE 1N4148M (FA5ES)	
D470	8-719-200-02	DIODE 10E2 (FA7ES)	

## < IC >

IC201	8-759-701-25	IC NJM2068D-D (FA5ES)	
IC201	8-759-259-12	IC OPA2604AP (FA7ES)	

## < TRANSISTOR >

Q201	8-729-217-04	TRANSISTOR 2SK170-V (FA5ES)	
Q201	8-729-214-71	TRANSISTOR 2SK147-GR (FA7ES)	
Q202	8-729-217-04	TRANSISTOR 2SK170-V (FA5ES)	
Q202	8-729-214-71	TRANSISTOR 2SK147-GR (FA7ES)	
Q203	8-729-203-45	TRANSISTOR 2SC3423-0	

Ref. No.	Part No.	Description	Remark
Q204	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q205	8-729-281-54	TRANSISTOR 2SC1815-BL	
Q251	8-729-217-04	TRANSISTOR 2SK170-V (FA5ES)	
Q251	8-729-214-71	TRANSISTOR 2SK147-GR (FA7ES)	
Q252	8-729-217-04	TRANSISTOR 2SK170-V (FA5ES)	

Q252	8-729-214-71	TRANSISTOR 2SK147-GR (FA7ES)	
Q253	8-729-203-45	TRANSISTOR 2SC3423-0	
Q254	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q255	8-729-281-54	TRANSISTOR 2SC1815-BL	
Q401	8-729-203-21	TRANSISTOR 2SK389-GR	
Q402	8-729-281-54	TRANSISTOR 2SC1815-BL	
Q403	8-729-281-54	TRANSISTOR 2SC1815-BL	
Q404	8-729-232-00	TRANSISTOR 2SA1349-GRBL	
Q405	8-729-018-21	TRANSISTOR 2SJ313-Y	
Q406	8-729-104-91	TRANSISTOR 2SA1383-Q	

Q407	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q408	8-729-104-18	TRANSISTOR 2SC3514-Q	
Q409	8-729-104-18	TRANSISTOR 2SC3514-Q	
Q410	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q411	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q412	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q451	8-729-203-21	TRANSISTOR 2SK389-GR	
Q452	8-729-281-54	TRANSISTOR 2SC1815-BL	
Q453	8-729-281-54	TRANSISTOR 2SC1815-BL	
Q454	8-729-232-00	TRANSISTOR 2SA1349-GRBL	

Q455	8-729-018-21	TRANSISTOR 2SJ313-Y	
Q456	8-729-104-91	TRANSISTOR 2SA1383-Q	
Q457	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q458	8-729-104-18	TRANSISTOR 2SC3514-Q	
Q459	8-729-104-18	TRANSISTOR 2SC3514-Q	

Q460	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q461	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q462	8-729-202-67	TRANSISTOR 2SK246-GR3	

## < RESISTOR >

R201	1-249-911-11	CARBON 330 5% 1/4W	
R202	1-259-143-21	CARBON 100 5% 1/4W	
R203	1-259-207-21	CARBON 47K 5% 1/4W	
R204	1-249-919-11	CARBON 680 5% 1/4W	
R205	1-249-919-11	CARBON 680 5% 1/4W	

R206	1-249-939-11	CARBON 4.7K 5% 1/4W	
R207	1-259-143-21	CARBON 100 5% 1/4W	
R208	1-249-915-11	CARBON 470 5% 1/4W	
R209	1-259-143-21	CARBON 100 5% 1/4W	
R210	1-249-485-11	CARBON 8.2 5% 1/3W	

R211	1-249-887-11	CARBON 33 5% 1/4W	
R212	1-259-151-21	CARBON 220 5% 1/4W	
R213	1-259-151-21	CARBON 220 5% 1/4W	
R214	1-124-995-11	CARBON 1M 5% 1/4W	

# MAIN. A

# MAIN B-L

Ref. No.	Part No.	Description	Remark		
R215	1-249-844-11	CARBON	56K	1%	1/2W
R216	1-249-818-11	CARBON	4. 7K	1%	1/2W
R217	1-259-151-21	CARBON	220	5%	1/4W
R251	1-249-911-11	CARBON	330	5%	1/4W
R252	1-259-143-21	CARBON	100	5%	1/4W
R253	1-259-207-21	CARBON	47K	5%	1/4W
R254	1-249-919-11	CARBON	680	5%	1/4W
R255	1-249-919-11	CARBON	680	5%	1/4W
R256	1-249-939-11	CARBON	4. 7K	5%	1/4W
R257	1-259-143-21	CARBON	100	5%	1/4W
R258	1-249-915-11	CARBON	470	5%	1/4W
R259	1-259-143-21	CARBON	100	5%	1/4W
R260	1-249-485-11	CARBON	8. 2	5%	1/3W
R261	1-249-887-11	CARBON	33	5%	1/4W
R262	1-259-151-21	CARBON	220	5%	1/4W
R263	1-259-151-21	CARBON	220	5%	1/4W
R264	1-124-995-11	CARBON	1M	5%	1/4W
R265	1-249-844-11	CARBON	56K	1%	1/2W
R266	1-249-818-11	CARBON	4. 7K	1%	1/2W
R267	1-259-151-21	CARBON	220	5%	1/4W
R401	1-214-937-00	METAL	1M	1%	1/2W
R402	1-249-210-11	CARBON	1K	5%	1/3W
R403	1-249-883-11	CARBON	22	5%	1/4W
R404	1-249-883-11	CARBON	22	5%	1/4W
R405	1-249-931-11	CARBON	2. 2K	5%	1/4W
R406	1-249-943-11	CARBON	6. 8K	5%	1/4W
R407	1-259-151-21	CARBON	220	5%	1/4W
R408	1-259-151-21	CARBON	220	5%	1/4W
R409	1-259-151-21	CARBON	220	5%	1/4W
R410	1-259-207-21	CARBON	47K	5%	1/4W
R411	1-259-167-21	CARBON	1K	5%	1/4W
△R412	1-219-193-11	FUSIBLE	220	5%	1/2W F
R413	1-249-842-11	CARBON	47K	5%	1/2W
R414	1-259-171-21	CARBON	1. 5K	5%	1/4W
R415	1-249-953-11	CARBON	18K	5%	1/4W
R416	1-249-186-11	CARBON	100	5%	1/3W
R417	1-249-234-11	CARBON	10K	5%	1/3W
R418	1-249-234-11	CARBON	10K	5%	1/3W
R419	1-214-937-00	METAL	1M	1%	1/2W
R420	1-259-171-21	CARBON	1. 5K	5%	1/4W
R421	1-249-939-11	CARBON	4. 7K	5%	1/4W
△R422	1-219-022-11	FUSIBLE	100	5%	1/2W F
△R444	1-219-022-11	FUSIBLE	100	5%	1/2W F
△R445	1-219-022-11	FUSIBLE	100	5%	1/2W F
R451	1-214-937-00	METAL	1M	1%	1/2W
R452	1-249-210-11	CARBON	1K	5%	1/3W
R453	1-249-883-11	CARBON	22	5%	1/4W
R454	1-249-883-11	CARBON	22	5%	1/4W

Ref. No.	Part No.	Description	Remark		
R455	1-249-931-11	CARBON	2. 2K	5%	1/4W
R456	1-249-943-11	CARBON	6. 8K	5%	1/4W
R457	1-259-151-21	CARBON	220	5%	1/4W
R458	1-259-151-21	CARBON	220	5%	1/4W
R459	1-259-151-21	CARBON	220	5%	1/4W
R460	1-259-207-21	CARBON	47K	5%	1/4W
R461	1-259-167-21	CARBON	1K	5%	1/4W
△R462	1-219-193-11	FUSIBLE	220	5%	1/2W F
R463	1-249-842-11	CARBON	47K	5%	1/2W
R464	1-259-171-21	CARBON	1. 5K	5%	1/4W
R465	1-249-953-11	CARBON	18K	5%	1/4W
R466	1-249-186-11	CARBON	100	5%	1/3W
R467	1-249-234-11	CARBON	10K	5%	1/3W
R468	1-249-234-11	CARBON	10K	5%	1/3W
R469	1-214-937-00	METAL	1M	1%	1/2W
R470	1-259-171-21	CARBON	1. 5K	5%	1/4W
R471	1-249-939-11	CARBON	4. 7K	5%	1/4W
△R472	1-219-022-11	FUSIBLE	100	5%	1/2W F
△R494	1-219-022-11	FUSIBLE	100	5%	1/2W F
△R495	1-219-022-11	FUSIBLE	100	5%	1/2W F

## < SWITCH >

S201 1-572-642-11 SWITCH, PUSH (1 KEY) (CARTRIDGE)

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\* 1-655-074-11 MAIN B-L BOARD (FA5ES)

\* 1-655-074-21 MAIN B-L BOARD (FA7ES)

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## < CAPACITOR >

C516	1-137-163-11	FILM	0. 33uF	10%	63V
C517	1-137-163-11	FILM	0. 33uF	10%	63V
C520	1-124-920-11	ELECT	330uF	20%	63V (FA5ES)
C520	1-110-391-11	ELECT	33uF	20%	63V (FA7ES)
C570	1-110-391-11	ELECT	33uF	20%	63V (FA7ES)

## < CONNECTOR >

\* CN501 1-564-506-11 PLUG, CONNECTOR 3P

\* CN502 1-564-506-11 PLUG, CONNECTOR 3P

CN503 1-766-897-21 PIN, CONNECTOR (PC BOARD) 4P

## < DIODE >

D505	8-719-987-63	DIODE	1N4148M
D506	8-719-985-53	DIODE	HZS4ALL
D507	8-719-310-60	LED	SEL1510C-C
D511	8-719-987-63	DIODE	1N4148M
D512	8-719-985-53	DIODE	HZS4ALL

D513	8-719-987-63	DIODE	1N4148M
D514	8-719-987-63	DIODE	1N4148M

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

MAIN B-L	MAIN B-R	MEDAMA	MUT LED	OUT LET
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Ref. No.	Part No.	Description	Remark		
< TRANSISTOR >					
Q514	8-729-201-53	TRANSISTOR	2SA1015-GR		
Q521	8-729-140-82	TRANSISTOR	2SA988-PAFAEA		
< RESISTOR >					
R523	1-249-941-11	CARBON	5.6K	5%	1/4W
R524	1-259-167-21	CARBON	1K	5%	1/4W
R525	1-259-171-21	CARBON	1.5K	5%	1/4W
△R526	1-202-954-11	FUSIBLE	470	5%	1/2W F
△R527	1-202-954-11	FUSIBLE	470	5%	1/2W F
△R528	1-219-193-11	FUSIBLE	220	5%	1/2W F
△R529	1-219-185-11	FUSIBLE	47	5%	1/2W F
△R532	1-219-185-11	FUSIBLE	47	5%	1/2W F
R534	1-219-392-11	RES, WIREWOUND			
R535	1-249-951-11	CARBON	15K	5%	1/4W
R536	1-259-191-21	CARBON	10K	5%	1/4W
△R537	1-247-717-11	CARBON	2.2K	5%	1/4W F
△R538	1-247-717-11	CARBON	2.2K	5%	1/4W F
< VARIABLE RESISTOR >					
RT501	1-224-490-11	RES, ADJ, METAL FILM 4.7K			
*****					
*	1-655-075-11	MAIN B-R BOARD (FA5ES)			
*	1-655-075-21	MAIN B-R BOARD (FA7ES)			
*****					
< CAPACITOR >					
C566	1-137-163-11	FILM	0.33uF	10%	63V
C567	1-137-163-11	FILM	0.33uF	10%	63V
C570	1-124-920-11	ELECT	330uF	20%	63V (FA5ES)
< CONNECTOR >					
* CN551	1-564-506-11	PLUG, CONNECTOR 3P			
* CN552	1-564-506-11	PLUG, CONNECTOR 3P			
CN553	1-766-897-11	PIN, CONNECTOR (PC BOARD) 4P			
< DIODE >					
D555	8-719-987-63	DIODE	1N4148M		
D556	8-719-985-53	DIODE	HZS4ALL		
D557	8-719-310-60	LED	SEL1510C-C		
D561	8-719-987-63	DIODE	1N4148M		
D562	8-719-985-53	DIODE	HZS4ALL		
D564	8-719-987-63	DIODE	1N4148M		
D565	8-719-987-63	DIODE	1N4148M		
< TRANSISTOR >					
Q564	8-729-201-53	TRANSISTOR	2SA1015-GR		

Ref. No.	Part No.	Description	Remark		
Q571	8-729-140-82	TRANSISTOR	2SA988-PAFAEA		
< RESISTOR >					
R573	1-249-941-11	CARBON	5.6K 5%	1/4W	
R574	1-259-167-21	CARBON	1K 5%	1/4W	
R575	1-259-171-21	CARBON	1.5K 5%	1/4W	
△R576	1-202-954-11	FUSIBLE	470 5%	1/2W F	
△R577	1-202-954-11	FUSIBLE	470 5%	1/2W F	
△R578	1-219-193-11	FUSIBLE	220 5%	1/2W F	
△R579	1-219-185-11	FUSIBLE	47 5%	1/2W F	
△R582	1-219-185-11	FUSIBLE	47 5%	1/2W F	
R584	1-219-392-11	RES, WIREWOUND			
R585	1-249-951-11	CARBON	15K 5%	1/4W	
R586	1-259-191-21	CARBON	10K 5%	1/4W	
△R587	1-247-717-11	CARBON	2.2K 5%	1/4W F	
△R588	1-247-717-11	CARBON	2.2K 5%	1/4W F	
< VARIABLE RESISTOR >					
RT551	1-224-490-11	RES, ADJ, METAL FILM 4.7K			
*****					
*	1-655-083-11	MEDAMA BOARD			
*****					
< IC >					
IC906	8-749-923-43	IC	GP1U57XB		
*****					
*	1-655-084-11	MUT LED BOARD			
*****					
< CONNECTOR >					
* CN316	1-564-506-11	PLUG, CONNECTOR 3P			
< DIODE >					
D302	8-719-301-49	LED	SEL2810A (MUTING)		
*****					
*	1-655-090-11	OUT LET BOARD			
*****					
*	1-533-185-11	HOLDER, FUSE			
< CAPACITOR >					
△C802	1-161-742-00	CERAMIC	0.0022uF 20%	400V	
< CONNECTOR >					
CN100	1-564-321-00	PIN, CONNECTOR 2P			
* CN101	1-564-321-21	PIN, CONNECTOR 2P			

The components identified by  
mark △ or dotted line with mark.  
△ are critical for safety.  
Replace only with part number  
specified.

OUT LET

PRE PS

PRO

Ref. No.	Part No.	Description	Remark
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CN102	1-580-629-21	PIN, CONNECTOR 2P	
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## &lt; FUSE &gt;

△F802	1-532-299-00	FUSE, TIME-LAG (T5A/250V) (FA7ES)	
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△F802	1-532-350-00	FUSE, TIME-LAG (T4A/250V) (FA5ES)	
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*	1-655-077-11	PRE PS BOARD (FA5ES)	
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*	1-655-077-21	PRE PS BOARD (FA7ES)	
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## &lt; CAPACITOR &gt;

C801	1-124-922-11	ELECT	1000uF	20%	63V (FA5ES)
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C801	1-110-397-11	ELECT	1000uF	20%	63V (FA7ES)
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C802	1-124-922-11	ELECT	1000uF	20%	63V (FA5ES)
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C802	1-110-397-11	ELECT	1000uF	20%	63V (FA7ES)
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C808	1-126-066-11	ELECT	470uF	20%	63V (FA5ES)
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C808	1-110-397-11	ELECT	1000uF	20%	63V (FA7ES)
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C809	1-110-393-11	ELECT	100uF	20%	63V
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C851	1-124-922-11	ELECT	1000uF	20%	63V (FA5ES)
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C851	1-110-397-11	ELECT	1000uF	20%	63V (FA7ES)
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C852	1-124-922-11	ELECT	1000uF	20%	63V (FA5ES)
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C852	1-110-397-11	ELECT	1000uF	20%	63V (FA7ES)
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C858	1-126-066-11	ELECT	470uF	20%	63V (FA5ES)
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C858	1-110-397-11	ELECT	1000uF	20%	63V (FA7ES)
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C859	1-110-393-11	ELECT	100uF	20%	63V
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## &lt; CONNECTOR &gt;

CN801	1-691-768-11	PLUG (MICRO CONNECTOR) 6P	
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CN802	1-564-510-11	PLUG (MICRO CONNECTOR) 6P	
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* CN803	1-564-506-11	PLUG, CONNECTOR 3P	
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* CN804	1-564-506-11	PLUG, CONNECTOR 3P (FA7ES)	
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## &lt; DIODE &gt;

D801	8-719-000-93	DIODE	UZL-7H1	
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D802	8-719-000-93	DIODE	UZL-7H1	
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D851	8-719-000-93	DIODE	UZL-7H1	
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D852	8-719-000-93	DIODE	UZL-7H1	
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## &lt; TRANSISTOR &gt;

Q806	8-729-030-18	TRANSISTOR	2SD2525	
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Q807	8-729-281-54	TRANSISTOR	2SC1815-BL	
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Q808	8-729-202-67	TRANSISTOR	2SK246-GR3	
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Q809	8-729-030-18	TRANSISTOR	2SD2525	
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Q810	8-729-030-18	TRANSISTOR	2SD2525	
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Q856	8-729-030-19	TRANSISTOR	2SB1640	
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Q857	8-729-201-53	TRANSISTOR	2SA1015-GR	
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Q858	8-729-202-67	TRANSISTOR	2SK246-GR3	
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Q859	8-729-030-19	TRANSISTOR	2SB1640	
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Q860	8-729-030-19	TRANSISTOR	2SB1640	
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Ref. No.	Part No.	Description	Remark
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## &lt; RESISTOR &gt;

R818	1-259-171-21	CARBON	1.5K	5%	1/4W
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R819	1-249-931-11	CARBON	2.2K	5%	1/4W
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△R820	1-219-189-11	FUSIBLE	100	5%	1/2W F (FA5ES)
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△R820	1-219-022-11	FUSIBLE	100	5%	1/2W F (FA7ES)
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△R821	1-219-189-11	FUSIBLE	100	5%	1/2W F (FA5ES)
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△R821	1-219-022-11	FUSIBLE	100	5%	1/2W F (FA7ES)
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△R822	1-219-189-11	FUSIBLE	100	5%	1/2W F (FA5ES)
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△R822	1-219-022-11	FUSIBLE	100	5%	1/2W F (FA7ES)
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△R823	1-219-189-11	FUSIBLE	100	5%	1/2W F (FA5ES)
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△R823	1-219-022-11	FUSIBLE	100	5%	1/2W F (FA7ES)
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R868	1-259-171-21	CARBON	1.5K	5%	1/4W
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R869	1-249-931-11	CARBON	2.2K	5%	1/4W
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△R870	1-219-189-11	FUSIBLE	100	5%	1/2W F (FA5ES)
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△R870	1-219-022-11	FUSIBLE	100	5%	1/2W F (FA7ES)
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△R871	1-219-189-11	FUSIBLE	100	5%	1/2W F (FA5ES)
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△R871	1-219-022-11	FUSIBLE	100	5%	1/2W F (FA7ES)
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△R872	1-219-189-11	FUSIBLE	100	5%	1/2W F (FA5ES)
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△R872	1-219-022-11	FUSIBLE	100	5%	1/2W F (FA7ES)
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△R873	1-219-189-11	FUSIBLE	100	5%	1/2W F (FA5ES)
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△R873	1-219-022-11	FUSIBLE	100	5%	1/2W F (FA7ES)
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## &lt; TRANSFORMER &gt;

T801	1-427-648-11	TRANSFORMER (CHOKE)	
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*	A-4378-503-A	PRO BOARD, COMPLETE (FA5ES)	
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*	A-4378-516-A	PRO BOARD, COMPLETE (FA7ES)	
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## &lt; CAPACITOR &gt;

C603	1-136-157-00	FILM	0.022uF	5%	50V
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C604	1-124-120-11	ELECT	220uF	20%	25V
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C605	1-124-910-11	ELECT	47uF	20%	50V
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C607	1-136-157-00	FILM	0.022uF	5%	50V
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C608	1-126-058-11	ELECT	4.7uF	20%	63V
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C609	1-124-918-11	ELECT	47uF	20%	63V
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C610	1-126-058-11	ELECT	4.7uF	20%	63V
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C611	1-136-157-00	FILM	0.022uF	5%	50V
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C612	1-126-059-11	ELECT	10uF	20%	63V
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C620	1-130-973-00	FILM	0.022uF	2%	100V
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C670	1-130-973-00	FILM	0.022uF	2%	100V
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## &lt; CONNECTOR &gt;

CN601	1-766-897-11	PIN, CONNECTOR (PC BOARD) 4P	
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CN602	1-691-766-11	PLUG (MICRO CONNECTOR) 4P	
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* CN603	1-564-506-11	PLUG, CONNECTOR 3P	
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* CN604	1-564-506-11	PLUG, CONNECTOR 3P	
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CN605	1-564-505-11	PLUG, CONNECTOR 2P	
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The components identified by  
mark △ or dotted line with mark  
△ are critical for safety.  
Replace only with part number  
specified.



PRO

PRO LED

PS

Ref.No.	Part No.	Description	Remark
* CN606	1-564-506-11	PLUG, CONNECTOR 3P	
* CN607	1-564-506-11	PLUG, CONNECTOR 3P	
* CN608	1-564-506-11	PLUG, CONNECTOR 3P	
CN609	1-691-766-21	PLUG (MICRO CONNECTOR) 4P	
CN610	1-766-897-21	PIN, CONNECTOR (PC BOARD) 4P	
< DIODE >			
D601	8-719-987-63	DIODE 1N4148M	
D602	8-719-310-60	LED SEL1510C-C	
D603	8-719-987-63	DIODE 1N4148M	
< IC >			
IC601	8-759-111-68	IC uPC1237HA	
< COIL >			
L601	1-422-009-21	COIL, AIR-CORE	
L651	1-422-009-21	COIL, AIR-CORE	
< TRANSISTOR >			
Q601	8-729-281-54	TRANSISTOR 2SC1815-BL	
Q602	8-729-030-18	TRANSISTOR 2SD2525	
Q603	8-729-201-53	TRANSISTOR 2SA1015-GR	
Q604	8-729-201-53	TRANSISTOR 2SA1015-GR	
Q605	8-729-281-54	TRANSISTOR 2SC1815-BL	
Q606	8-729-030-18	TRANSISTOR 2SD2525	
< RESISTOR >			
R604	1-259-223-21	CARBON 220K 5% 1/4W	
R606	1-259-191-21	CARBON 10K 5% 1/4W	
R607	1-249-885-11	CARBON 27 5% 1/4W	
R608	1-249-725-11	CARBON 150K 5% 1/4W	
R609	1-249-951-11	CARBON 15K 5% 1/4W	
R610	1-260-322-11	CARBON 330 5% 1/2W	
R612	1-249-939-11	CARBON 4.7K 5% 1/4W	
R613	1-259-191-21	CARBON 10K 5% 1/4W	
R614	1-259-207-21	CARBON 47K 5% 1/4W	
R615	1-249-955-11	CARBON 22K 5% 1/4W	
R616	1-259-207-21	CARBON 47K 5% 1/4W	
R617	1-249-955-11	CARBON 22K 5% 1/4W	
R620	1-249-733-11	CARBON 330K 5% 1/4W	
R621	1-249-754-11	CARBON 10 5% 1/2W	
R622	1-249-798-11	CARBON 680 5% 1/2W	
△R624	1-217-989-11	FUSIBLE 4.7 5% 1/2W F (FA5ES)	
△R624	1-260-072-11	FUSIBLE 4.7 5% 1/2W F (FA7ES)	
△R625	1-217-989-11	FUSIBLE 4.7 5% 1/2W F (FA5ES)	
△R625	1-260-072-11	FUSIBLE 4.7 5% 1/2W F (FA7ES)	
R626	1-259-167-21	CARBON 1K 5% 1/4W	
R628	1-260-322-11	CARBON 330 5% 1/2W	

Ref.No.	Part No.	Description	Remark
R629	1-260-322-11	CARBON 330 5% 1/2W	
R670	1-249-733-11	CARBON 330K 5% 1/4W	
R671	1-249-754-11	CARBON 10 5% 1/2W	
R672	1-249-798-11	CARBON 680 5% 1/2W	
△R674	1-217-989-11	FUSIBLE 4.7 5% 1/2W F (FA5ES)	
△R674	1-260-072-11	FUSIBLE 4.7 5% 1/2W F (FA7ES)	
△R675	1-217-989-11	FUSIBLE 4.7 5% 1/2W F (FA5ES)	
△R675	1-260-072-11	FUSIBLE 4.7 5% 1/2W F (FA7ES)	
R677	1-249-794-11	CARBON 470 5% 1/2W	
R678	1-249-794-11	CARBON 470 5% 1/2W	
< RELAY >			
RY601	1-755-061-11	RELAY	
RY602	1-515-676-11	RELAY	
*****			
*	1-655-085-11	PRO LED BOARD	
*****			
< CONNECTOR >			
* CN806	1-564-506-11	PLUG, CONNECTOR 3P	
< DIODE >			
D801	8-719-313-40	LED SEL1516W (POWER)	
< RESISTOR >			
R801	1-249-407-11	CARBON 150 5% 1/4W	
*****			
*	1-655-078-11	PS BOARD (FA5ES)	
*	1-655-078-21	PS BOARD (FA7ES)	
*****			
*	3-555-872-21	SPACER	
< TERMINAL >			
* BP701	1-535-117-00	TERMINAL	
* BP702	1-535-117-00	TERMINAL	
* BP703	1-535-115-00	TERMINAL	
* BP704	1-535-115-00	TERMINAL	
< CAPACITOR >			
C703	1-124-920-11	ELECT 330uF 20% 63V	
C704	1-124-920-11	ELECT 330uF 20% 63V	
C705	1-124-791-11	ELECT 1.0uF 20% 100V	
C706	1-124-920-11	ELECT 330uF 20% 63V	
C707	1-136-880-11	FILM 2.2uF 10% 160V	
C708	1-124-920-11	ELECT 330uF 20% 63V (FA7ES)	

The components identified by mark △ or dotted line with mark. △ are critical for safety. Replace only with part number specified.

## PS

## PS JUMPER

## REC OUT

## SP-TM

## TONE. CONTROL

Ref. No.	Part No.	Description	Remark
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## &lt; CONNECTOR &gt;

* CN701	1-564-241-11	PIN, CONNECTOR (B4P-VH) 4P	
CN703	1-691-766-31	PLUG (MICRO CONNECTOR) 4P	
CN705	1-691-768-11	PLUG (MICRO CONNECTOR) 6P	
* CN706	1-564-506-11	PLUG, CONNECTOR 3P	

## &lt; DIODE &gt;

D701	8-719-210-25	DIODE C25P20F	
D702	8-719-210-25	DIODE C25P20F	
D703	8-719-210-26	DIODE C25P20FR	
D704	8-719-210-26	DIODE C25P20FR	
D705	8-719-200-82	DIODE 11ES2	

D706	8-719-200-82	DIODE 11ES2	
D707	8-719-200-82	DIODE 11ES2	
D708	8-719-200-82	DIODE 11ES2	
D709	8-719-200-82	DIODE 11ES2	
D710	8-719-200-82	DIODE 11ES2	

D711	8-719-200-82	DIODE 11ES2	
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## &lt; PLATE GROUND &gt;

* EPT701	4-916-791-01	PLATE, GROUND, 5P	
* EPT702	3-346-266-21	PLATE, GROUND	
* EPT703	3-346-266-21	PLATE, GROUND	
* EPT704	3-346-266-21	PLATE, GROUND	
* EPT705	3-346-266-21	PLATE, GROUND	

## &lt; RESISTOR &gt;

△R701	1-219-165-11	FUSIBLE 1 5% 1/2W F	
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*	1-655-076-11	PS JUMPER BOARD (FA5ES)	
*	1-655-076-21	PS JUMPER BOARD (FA7ES)	

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*	1-655-082-11	REC OUT BOARD	
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## &lt; CONNECTOR &gt;

* CN315	1-564-506-11	PLUG, CONNECTOR 3P	
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## &lt; SWITCH &gt;

S302	1-762-186-11	SWITCH, TOGGLE (REC OUT)	
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*	1-655-072-11	SP-TM BOARD (FA5ES)	
*	1-655-072-21	SP-TM BOARD (FA7ES)	

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Ref. No.	Part No.	Description	Remark
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## &lt; TERMINAL &gt;

TM801	1-537-930-11	TERMINAL BOARD (SP) 4P (FA5ES)	
TM801	1-537-931-11	TERMINAL BOARD (SP) 4P (FA7ES)	
TM802	1-537-930-11	TERMINAL BOARD (SP) 4P (FA5ES)	
TM802	1-537-931-11	TERMINAL BOARD (SP) 4P (FA7ES)	

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*	A-4371-831-A	TONE. CONTROL BOARD, COMPLET	
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*	1-535-730-21	LEAD, JUMPER (OFC)	
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## &lt; CAPACITOR &gt;

C301	1-130-475-00	MYLAR 0.0022uF 5% 50V	
C302	1-130-483-00	MYLAR 0.01uF 5% 50V	
C303	1-130-485-00	MYLAR 0.015uF 5% 50V	
C304	1-136-165-00	FILM 0.1uF 5% 50V	
C306	1-136-165-00	FILM 0.1uF 5% 50V	

C307	1-136-165-00	FILM 0.1uF 5% 50V	
C351	1-130-475-00	MYLAR 0.0022uF 5% 50V	
C352	1-130-483-00	MYLAR 0.01uF 5% 50V	
C353	1-130-485-00	MYLAR 0.015uF 5% 50V	
C354	1-136-165-00	FILM 0.1uF 5% 50V	

C805	1-106-343-00	MYLAR 1000PF 5% 200V	
C806	1-106-343-00	MYLAR 1000PF 5% 200V	
C901	1-126-376-11	ELECT 470uF 20% 25V	
C902	1-164-159-11	CERAMIC 0.1uF 50V	
C903	1-126-023-11	ELECT 100uF 20% 16V	

C904	1-162-207-31	CERAMIC 22PF 5% 50V	
C905	1-162-207-31	CERAMIC 22PF 5% 50V	
C906	1-162-282-31	CERAMIC 100PF 10% 50V	
C907	1-164-159-11	CERAMIC 0.1uF 50V	
C908	1-164-159-11	CERAMIC 0.1uF 50V	

C909	1-136-165-00	FILM 0.1uF 5% 50V	
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## &lt; CONNECTOR &gt;

* CN301	1-564-506-11	PLUG, CONNECTOR 3P	
CN302	1-691-766-41	PLUG (MICRO CONNECTOR) 4P	
CN303	1-691-770-11	PLUG (MICRO CONNECTOR) 8P	
* CN310	1-564-506-11	PLUG, CONNECTOR 3P	
* CN313	1-564-506-11	PLUG, CONNECTOR 3P	

* CN314	1-564-506-11	PLUG, CONNECTOR 3P	
CN352	1-691-766-31	PLUG (MICRO CONNECTOR) 4P	
* CN807	1-564-506-11	PLUG, CONNECTOR 3P	
CN901	1-564-320-00	PIN, CONNECTOR (B2P-VH) 2P	
CN902	1-564-505-11	PLUG, CONNECTOR 2P	

CN903	1-691-772-11	PLUG (MICRO CONNECTOR) 10P	
* CN905	1-564-506-11	PLUG, CONNECTOR 3P	
* CN906	1-564-506-11	PLUG, CONNECTOR 3P	

The components identified by mark △ or dotted line with mark. △ are critical for safety. Replace only with part number specified.

# TONE. CONTROL

# VOL

Ref.No.	Part No.	Description	Remark
CN907	1-691-770-11	PLUG (MICRO CONNECTOR) 8P	
< DIODE >			
D901	8-719-200-02	DIODE 10E2	
D902	8-719-200-02	DIODE 10E2	
D903	8-719-200-02	DIODE 10E2	
D904	8-719-200-02	DIODE 10E2	
D905	8-719-987-63	DIODE 1N4148M	
D906	8-719-987-63	DIODE 1N4148M	
D907	8-719-987-63	DIODE 1N4148M	
D908	8-719-987-63	DIODE 1N4148M	
D909	8-719-987-63	DIODE 1N4148M	
D910	8-719-987-63	DIODE 1N4148M	
D911	8-719-987-63	DIODE 1N4148M	
D912	8-719-987-63	DIODE 1N4148M	
D913	8-719-200-02	DIODE 10E2	
< IC >			
IC901	8-759-325-18	IC TMP47C200BN-H327	
IC902	8-759-635-63	IC M51943BSL	
IC903	8-759-188-67	IC X24C01P-S	
IC904	8-759-962-08	IC BA6208	
IC905	8-759-231-53	IC TA7805S	
< TRANSISTOR >			
Q301	8-729-281-54	TRANSISTOR 2SC1815-BL	
Q901	8-729-900-63	TRANSISTOR DTA124ES	
Q902	8-729-900-63	TRANSISTOR DTA124ES	
Q903	8-729-900-63	TRANSISTOR DTA124ES	
Q904	8-729-900-63	TRANSISTOR DTA124ES	
Q905	8-729-900-63	TRANSISTOR DTA124ES	
Q906	8-729-900-63	TRANSISTOR DTA124ES	
Q907	8-729-900-63	TRANSISTOR DTA124ES	
Q908	8-729-900-63	TRANSISTOR DTA124ES	
< RESISTOR >			
R301	1-247-721-11	CARBON 4.7K 5% 1/4W	
R302	1-249-556-11	CARBON 1.5K 5% 1/4W	
R303	1-259-502-11	CARBON 4.7M 5% 1/4W	
R304	1-259-502-11	CARBON 4.7M 5% 1/4W	
R305	1-249-462-11	CARBON 22K 5% 1/4W	
R306	1-247-721-11	CARBON 4.7K 5% 1/4W	
R307	1-249-425-11	CARBON 4.7K 5% 1/4W	
R311	1-249-425-11	CARBON 4.7K 5% 1/4W	
R351	1-247-721-11	CARBON 4.7K 5% 1/4W	
R352	1-249-556-11	CARBON 1.5K 5% 1/4W	
R353	1-259-502-11	CARBON 4.7M 5% 1/4W	
R354	1-259-502-11	CARBON 4.7M 5% 1/4W	
R355	1-249-462-11	CARBON 22K 5% 1/4W	

Ref.No.	Part No.	Description	Remark
R356	1-247-721-11	CARBON 4.7K 5% 1/4W	
R824	1-247-747-11	CARBON 470 5% 1/2W	
R825	1-247-747-11	CARBON 470 5% 1/2W	
R901	1-249-433-11	CARBON 22K 5% 1/4W	
R902	1-249-433-11	CARBON 22K 5% 1/4W	
R903	1-249-433-11	CARBON 22K 5% 1/4W	
R904	1-249-433-11	CARBON 22K 5% 1/4W	
R905	1-249-433-11	CARBON 22K 5% 1/4W	
R906	1-249-433-11	CARBON 22K 5% 1/4W	
R907	1-249-425-11	CARBON 4.7K 5% 1/4W	
R908	1-249-425-11	CARBON 4.7K 5% 1/4W	
R909	1-249-425-11	CARBON 4.7K 5% 1/4W	
R910	1-249-429-11	CARBON 10K 5% 1/4W	
R911	1-249-429-11	CARBON 10K 5% 1/4W	
R913	1-249-433-11	CARBON 22K 5% 1/4W	
R914	1-249-433-11	CARBON 22K 5% 1/4W	
R915	1-249-429-11	CARBON 10K 5% 1/4W	
R916	1-247-807-31	CARBON 100 5% 1/4W	
R917	1-247-807-31	CARBON 100 5% 1/4W	
R918	1-247-807-31	CARBON 100 5% 1/4W	
R919	1-247-807-31	CARBON 100 5% 1/4W	
R920	1-247-807-31	CARBON 100 5% 1/4W	
R921	1-247-807-31	CARBON 100 5% 1/4W	
R922	1-247-807-31	CARBON 100 5% 1/4W	
R923	1-249-425-11	CARBON 4.7K 5% 1/4W	
R924	1-249-413-11	CARBON 470 5% 1/4W	
△R925	1-217-981-11	FUSIBLE 2.2 5% 1/2W F	
< VARIABLE RESISTOR >			
RV301	1-223-789-11	RES, VAR, CARBON 250K/250K (BALANCE)	
RV302	1-223-768-11	RES, VAR, CARBON 250K/250K (TREBLE)	
RV303	1-223-767-11	RES, VAR, CARBON 900K/900K (BASS)	
< SWITCH >			
S301	1-762-203-11	SWITCH, PUSH (1 KEY) (MUTING)	
S801	1-762-184-11	SWITCH, ROTARY (SPEAKERS)	
S901	1-762-183-11	SWITCH, ROTARY (INPUT SELECTOR)	
< VIBRATOR >			
X901	1-579-223-11	OSCILLATOR, CERAMIC (8.19MHz)	
*****			
*	1-655-087-11	VOL BOARD	
*****			
< CAPACITOR >			
C308	1-136-165-00	FILM 0.1uF 5% 50V	
C309	1-136-165-00	FILM 0.1uF 5% 50V	
C310	1-136-165-00	FILM 0.1uF 5% 50V	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
< CONNECTOR >			
CN305	1-691-766-41	PLUG (MICRO CONNECTOR) 4P	
CN306	1-691-770-11	PLUG (MICRO CONNECTOR) 8P	
CN308	1-691-766-21	PLUG (MICRO CONNECTOR) 4P	
CN309	1-691-766-11	PLUG (MICRO CONNECTOR) 4P	
CN355	1-691-766-31	PLUG (MICRO CONNECTOR) 4P	
< DIODE >			
D304	8-719-987-63	DIODE 1N4148M	
< TRANSISTOR >			
Q302	8-729-184-53	TRANSISTOR 2SC1845-EA	
< RESISTOR >			
R309	1-249-469-11	CARBON 100K 5% 1/4W	
R312	1-249-677-11	CARBON 1.5K 5% 1/2W	
R313	1-249-677-11	CARBON 1.5K 5% 1/2W	
R314	1-247-725-11	CARBON 10K 5% 1/4W	
R315	1-249-465-11	CARBON 47K 5% 1/4W	
R359	1-249-469-11	CARBON 100K 5% 1/4W	
< VARIABLE RESISTOR >			
RV304	1-223-765-11	RES, VAR, CARBON 120K/120K (ATTENUATOR) (FA5ES)	
RV304	1-223-765-21	RES, VAR, CARBON 120K/120K (ATTENUATOR) (FA7ES)	
< RELAY >			
RY301	1-755-062-11	RELAY	
< SWITCH >			
S303	1-762-190-11	SWITCH, PUSH (1 KEY) (SURGE DIRECT)	
*****			
MISCELLANEOUS			
*****			
* 160	1-535-691-21	TERMINAL (FA5ES)	
* 160	1-535-691-31	TERMINAL (FA7ES)	
161	1-506-113-00	SHORT PLUG	
C701	1-104-902-11	CAP, ELECT 15000uF (FA7ES)	
C701	1-107-845-12	CAP, ELECT 12000uF (FA5ES)	
C702	1-104-902-11	CAP, ELECT 15000uF (FA7ES)	
C702	1-107-845-12	CAP, ELECT 12000uF (FA5ES)	
△CNS1	1-575-953-11	CORD, POWER	
△F802	1-532-299-00	FUSE, TIME-LAG (T5A/250V) (FA7ES)	
△F802	1-532-350-00	FUSE, TIME-LAG (T4A/250V) (FA5ES)	
Q513	8-729-203-45	TRANSISTOR 2SC3423-0	

Ref. No.	Part No.	Description	Remark
Q515	8-729-018-19	TRANSISTOR 2SK2013-Y	
Q516	8-729-018-21	TRANSISTOR 2SJ313-Y	
Q518	8-729-018-11	TRANSISTOR 2SK1530A-Y (FA7ES)	
Q518	8-729-030-14	TRANSISTOR 2SK1530B-Y (FA5ES)	
Q520	8-729-018-13	TRANSISTOR 2SJ201A-Y (FA7ES)	
Q520	8-729-030-15	TRANSISTOR 2SJ201B-Y (FA5ES)	
Q563	8-729-203-45	TRANSISTOR 2SC3423-0	
Q565	8-729-018-19	TRANSISTOR 2SK2013-Y	
Q566	8-729-018-21	TRANSISTOR 2SJ313-Y	
Q568	8-729-018-11	TRANSISTOR 2SK1530A-Y (FA7ES)	
Q568	8-729-030-14	TRANSISTOR 2SK1530B-Y (FA5ES)	
Q570	8-729-018-13	TRANSISTOR 2SJ201A-Y (FA7ES)	
Q570	8-729-030-15	TRANSISTOR 2SJ201B-Y (FA5ES)	
S001	1-762-185-11	SWITCH, ROTARY SLIDE (REC OUT SELECTOR)	
△T1	1-429-111-11	TRANSFORMER, POWER (FA5ES)	
△T1	1-429-112-11	TRANSFORMER, POWER (FA7ES)	
*****			
ACCESSORIES & PACKING MATERIALS			
*****			
	1-465-801-11	REMOTE COMMANDER (RM-S703)	
	3-707-584-21	LID, BATTERY (for RM-S703)	
	3-800-210-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)	
	3-800-210-21	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN)	
*	4-970-079-01	CUSHION	
*	4-977-437-01	INDIVIDUAL CARTON (FA5ES)	
*	4-977-438-01	INDIVIDUAL CARTON (FA7ES)	

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**HARDWARE LIST**  
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#1	7-682-148-15	SCREW, TR
#2	7-682-246-09	SCREW +K 3X5
#3	7-682-548-09	SCREW (3X8)
#4	7-682-564-09	SCREW +B 4X14
#5	7-682-565-09	SCREW +B 4X16 (FA5ES)
#5	7-682-566-09	SCREW +B 4X20 (FA7ES)
#6	7-684-024-04	N 4, TYPE 2

The components identified by  
 mark △ or dotted line with mark.  
 △ are critical for safety.  
 Replace only with part number  
 specified.



# TA-FA5ES/FA7ES

SONY®

AEP Model

## SERVICE MANUAL

### CORRECTION-1

Please correct your service manual.

Subject: Correction of the connection in Electrical Adjustment

(SPM-98014)

 : indicates corrected portion.

